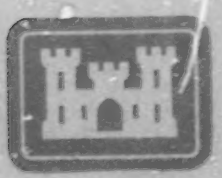
44/4

THE PORT OF

TOLEDO, OHIO

U. S. ARMY
CORPS OF ENGINEERS



PORT SERIES NO. 44
REVISED 1989

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U. S. ARMY
CORPS OF ENGINEERS

PORT SERIES NO. 44
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THE PORT OF

TOLEDO, OHIO

PREPARED BY
THE WATER RESOURCES SUPPORT CENTER

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72	Natchez, Vicksburg, and Greenville, MS, and Ports on Lower Mississippi River Miles 255-620 AHP.....(NEW EDITION)		

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INTRODUCTION

This report on the Port of Toledo, Ohio, is published as No. 44 of the Port Series. It supersedes a similar report revised in 1981.

The reports in the Port Series cover the principal United States coastal, Great Lakes, and inland ports, and are compiled and published by the Port Facilities Branch, Water Resources Support Center, U.S. Army Corps of Engineers, under authority of Section 7 of the River and Harbor Act of July 19, 1918, Section 500 of the Transportation Act of February 28, 1920, and Section 8 of the Merchant Marine Act of 1920.

Acknowledgment is made of the valuable assistance given by the Commander, U. S. Army Engineer District, Buffalo, New York; the Toledo Project Office, Corps of Engineers; facility operators; port organizations; shipping and transportation companies; and city officials in the work of compiling data for this report.

Unless otherwise stated, the information contained in this report was current upon completion of field survey in July 1988. Additional revised data have been included through April 1989.

All data for this report was collected and processed by personnel of the Port Facilities Branch, Water Resources Support Center. We invite user comments to help us maintain an accurate and current port data file inasmuch as there is an average seven years interval between revisions. Please report any errors, additions, deletions, and changes directly to Water Resources Support Center, Port Facilities Branch, Casey Building, Fort Belvoir, Virginia 22060-5586, telephone number (202)355-2495.

METRIC CONVERSION TABLE

Section 3 of Public Law 94-163, the Metric Conversion Act of 1975, declares that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States.

As an initial step, in accordance with the Metric Conversion Act of 1975, this Metric Conversion Table is included in this Port Series Report.

MULTIPLY	BY	TO OBTAIN
Inches	2.54001	Centimeters
Feet	0.304801	Meters
Miles, statute	1.60935	Kilometers
Square Feet	0.0929034	Square meters
Acres	0.404687	Hectares
Pounds per square foot	4.88241	Kilograms per square meter
Tons, short	0.907185	Metric tons
Tons, long	1.01605	Metric tons
Gallons	3.78543	Liters
Degrees, Fahrenheit	5/9 (F-32)	Degrees, Celsius
Barrels, oil	1.58988	Hectoliters
Bushels	0.0352391	Cubic meters

THE PORT OF TOLEDO, OHIO

PORT AND HARBOR CONDITIONS

LOCATION AND GENERAL DESCRIPTION

Toledo, Ohio, at the western end of Lake Erie, is on the Maumee River, which flows into Maumee Bay. The port area consists of the lower, 7-mile, deep-draft section of the Maumee River, and a dredged channel extending about 18 miles from the mouth of the river through Maumee Bay to deep water in Lake Erie. By water, the port is approximately 96 statute miles west of Cleveland, Ohio, and 237 miles southwesterly of Port Colborne, Ontario, Canada - the Lake Erie Terminus of the Welland Canal.

The Maumee River is formed by the confluence of the St. Marys and St. Joseph Rivers at Fort Wayne, Indiana, flows in a generally northeasterly direction, and empties into Lake Erie through Maumee Bay. The river has a varying width ranging from about 1,800 feet at the mouth to about 650 feet, 7 miles upstream. Maumee Bay is a large shallow body of water at the southwest corner of Lake Erie.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

The existing project, authorized by the River and Harbor Act of 3 March 1899 and modified by subsequent acts, of which the latest is dated 3 July 1958 and 14 July 1960, provides for:

> A channel 28 feet deep and 500 feet wide from deep water in Lake Erie to the mouth of the Maumee River, a distance of about 18 miles; including a widening of 38.6 acres opposite the Chesapeake and Ohio Railway and Lakefront Terminal Company docks; a channel in the river 27 feet deep and 400 feet wide from mile 0 (river mouth) to mile 3; thence a channel 400 feet wide from mile 3 to mile 6.5 with depths of 27 feet over a least width of 200 feet, and 25 feet over the remainder of the 400-foot channel width; thence a channel 25 feet deep and 200 feet wide to the upper limit of the project, mile 7; for a turning basin opposite the American Ship Building Company docks (mile 2.7) 750 feet wide, 800 feet long and 20 feet deep; for a turning basin just upstream from the Old Fassett Street Bridge (mile 6.5), generally semi-circular in shape with a radius of 730 feet, and 27 feet deep; and for a turning basin 18 feet deep and 8.25 acres in area at the upper project limit. The project also provides for clearing the sailing course between the Maumee Bay Channel and the East Outer Channel, Detroit River, to a depth of 28 feet over a width of 1,200 feet.

The project has been completed.

The project dimensions for Toledo Harbor are shown in the table below, the controlling depths are 28 feet for the Bay section and 27 feet for the river channel.

CHANNEL	PROJECT DIMENSIONS	
	WIDTH (FEET)	DEPTH (FEET)
Entrance channel to Buoy 49.....	500	28
Maumee Mooring Basin.....	450	28
Thence to Buoy 60 Maumee River Channel.....	400	27
Riverside Turning Basin.....	350	20
Thence to Anthony Wayne Bridge..	200	27
Thence to Buoy 64.....	200	27
Turning Basin.....	260-630	27
Thence to upstream limit of project.....	200	25
Turning Basin.....	835	18

All depths are referred to low water datum for Lake Erie, elevation 568.6 feet above mean water level at Father Point, Quebec (International Great Lakes Datum 1955).

Normal current in the Maumee River is approximately one mile per hour. Ordinary fluctuations of water level in Lake Erie are from 3.5 feet above to 0.5 foot below low water datum. Sudden fluctuations due to the wind in combination with prevailing high or low water frequently occur at each end of the lake; these fluctuations range from 8 feet above and to 7 feet below low water datum. Ice jams near the mouth of the Maumee River have raised the water in the river as high as 12 feet above low water datum.

ANCHORAGES

No federally designated anchorage areas have been established for Toledo Harbor. Vessels are not permitted to anchor in such a manner as to obstruct the passage of any other vessel coming into or out of the harbor.

BRIDGES

Within the port area, seven bridges cross the Maumee River. These bridges are described in the table on the following page.

LIST OF BRIDGES

MILES ABOVE MOUTH	DESIGNATION	TYPE	MINIMUM CLEARANCE (FEET) (PROCEEDING UPSTREAM)				REMARKS
			RIGHT	CENTER	LEFT	HEIGHT (LWD)	
1.1	Toledo Terminal Railroad	Swing.	145	-	143	22.2	Cables - 129 feet above LWD at point 700 feet on lower side of bridge.
1.9	Norfolk & Western Railway	Swing.	136	-	145	20.1	-
3.4	Interstate Highway 280 (Craig Memorial)	Bascule.	-	200	-	48.0	Double leaf-vertical clearance 39.5 feet at sides of span.
4.4	Cherry Street	Bascule.	-	200	-	31.3	Double leaf-vertical clearance 21 feet at sides of span.
5.0	Anthony Wayne	Suspension	-	747	-	108.2	Vertical clearance 104 feet at channel limits.
5.9	Consolidated Rail Corp.	Swing.	115	-	115	17.3	Cables over bridge least height 109 feet above LWD.
6.7	Interstate Highway 75	Fixed.	110	-	110	53.5	-

WEATHER CONDITIONS

The nearness of Lake Erie and the other Great Lakes has a moderating effect on the temperature and extremes are seldom recorded. On the average, there are only 15 days a year when the temperature reaches 90 degrees or higher, and only 8 days when it drops to zero or lower. On the average, the first frost in the fall occurs on September 24th, the first killing frost on October 12th, and the first freezing temperature on October 15th.

Humidity is rather high throughout the year in this area, and there is an excessive amount of cloudiness. In the winter months, the sun shines only about 30 percent of the daylight hours; December and January, the cloudiest months, sometimes have as little as 16 percent of the possible hours of sunshine.

Rainfall is usually sufficient for general agriculture. Snowfall is generally light in this area, averaging around 30 inches distributed throughout the winter from November to March with frequent thaws.

Flooding in the Toledo area is produced by several factors. Heavy rains of an inch or more will cause a sudden rise in creeks and drainage ditches to the point of overflow. The western shores of Lake Erie are subject to flooding when the lake level is high and prolonged periods of east to northeast winds prevail.

Severe windstorms, causing more than minor damage, occur infrequently. There are, on the average, 23 days per year having a sustained wind velocity of 32 miles per hour or more. Tornadoes occur occasionally but the area of damage is small.

The earliest and latest average dates for opening and closing navigation (1955-1964) in Toledo Harbor, Ohio, were as follows:

	Opening	Closing
Earliest date.....	March 7	December 8
Latest date.....	April 4	December 21

The information on the following page was compiled by the National Weather Station at the Toledo Express Airport, Toledo, Ohio, and published by the National Environmental Satellite, Data and Information Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 990	72014 Dock Code No. 999	72014 Dock Code No. 999
REFERENCE NUMBER ON MAP NO.	1	2	3
NAME	Toledo Edison Co., Bay Shore Station Wharf.	Lakefront Pellet Terminal Dock.	Toledo Docks, Pier No. 2.
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, inner portion of east side of private slip, west of foot of Wynn Road extended. 4701 Bayshore Road	Oregon, south shore of Maumee Bay, west side of slip east of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.	Oregon, south shore of Maumee Bay, approximately 500 feet east of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.
OWNED BY	The Toledo Edison Co.	CSX Transportation, Inc.; and Consolidated Rail Corp.	CSX Transportation, Inc.; and Consolidated Rail Corp.
OPERATED BY	Not operated.	Toledo Ore Railroad Co.	CSX Transportation-Toledo Docks.
PURPOSE FOR WHICH USED	Not used.	Receipt of iron ore pellets by self-unloading vessel.	Mooring vessels.
TYPE OF CONSTRUCTION	Steel sheet pile cellular bulkhead with solid fill; 3 timber breasting dolphins in line with face.	Steel sheet pile retaining walls with solid fill.	Pier formed by steel sheet pile retaining walls with solid fill; fronted by timber fender system.
DESCRIPTION	Face / Sides	Face	Face / East side
Dimensions (Feet)	208 / 40, each	1,133+684+288	100 / 1,815
Depth Alongside at MLW Do.	18-20 / -	27	- / 27
Breasting Distance Do.	613w\dolphs. / -	2,105	- / 1,815
Total Berthing Space Do.	613 / -	2,105	- / 1,815
Width of Apron Do.	Open.	90 and open.	Open.
Height of Deck at MLW Do.	5.5	10	10
Load Capacity (Lbs. per Sq. Ft.)	-	-	-
Lighted or Unlighted	Partly lighted.	Lighted.	Lighted.
MECHANICAL HANDLING FACILITIES	None.	Self-unloading vessels serve a temporary open storage area at rear of center section of face; 16 gates under temporary storage serve a 48-inch electric belt conveyor extending to a permanent open storage area approximately 1,000 feet in rear; rate 4,000 tons per hour. Permanent storage area is served by a single belt, rotating, traveling stacker; material is reclaimed by two 13-cubic yard, front-end loaders to a receiving hopper attached to the reversible stacker belt to main conveyor belt extending to a transfer station and rail car loading tower; rate forty 1,000-ton cars per hour.	One inoperable electric car dumper on each side of pier.
RAILWAY CONNECTIONS	Surface tracks serve rotary car dumper, adjacent open storage area, and electric power plant; connect with Norfolk and Western Railway.	Toledo Ore Railroad Co: One surface track at iron ore pellet loading tower extends from storage tracks with capacity for approximately 250 cars. (See Remarks.)	None.
HIGHWAY CONNECTIONS	Via plant road, from Bay Shore Road, concrete and asphalt, 24 feet wide.	Via plant road, asphalt, 10 to 15 feet wide, from Otter Creek and Bay Shore Roads, each asphalt, 24 feet wide.	Via plant road, asphalt, 10 to 15 feet wide, from Millard Avenue.
WATER SUPPLY (For Vessels)	None.	Through 1-1/4-inch line.	Through 6-inch line.
ELECTRIC CURRENT (For Vessels)	None.	A.C., 480 volts.	A.C., 220 volts.
FIRE PROTECTION (Other Than City)	Hydrants, hose and hand extinguishers.	Hydrants, hose, hand extinguishers and security patrol.	Hydrants, hose, hand extinguishers and security patrol.
REMARKS	A 300,000-ton, open coal storage area located on opposite side of Bay Shore Road is served by rail. Two 48-inch electric belt conveyors extend to plant from storage area, rates 600 and 1,000 tons per hour.	Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp, via Toledo Terminal Railroad. Temporary storage area at rear of face has capacity for 123,000 tons of iron ore pellets; permanent storage area in rear has capacity for 800,000 tons.	Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 999	72014 Dock Code No. 963	72014 Dock Code No. 963
REFERENCE NUMBER ON MAP NO.	4	5	6
NAME	Toledo Docks, Pier No. 3.	Toledo Docks, Main Coal Dock.	Toledo Docks, Middle Pier.
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, approximately 1,000 feet west of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.	Oregon, south shore of Maumee Bay, east side of Slip No. 1, approximately 1,200 feet east of the mouth of the Maumee River. Millard Avenue and Otter Creek Roads.	Oregon, south shore of Maumee Bay, approximately 600 feet east of the mouth of the Maumee River. Millard Avenue and Otter Creek Roads.
OWNED BY	CSX Transportation, Inc; and Consolidated Rail Corp.	Toledo-Lucas County Port Authority.	Toledo-Lucas County Port Authority.
OPERATED BY	CSX Transportation-Toledo Docks.	CSX Transportation-Toledo Docks.	CSX Transportation-Toledo Docks.
PURPOSE FOR WHICH USED	Mooring vessels.	Shipment of coal and petroleum coke; occasional bunkering; mooring harbor tugs at head of slip.	Shipment of coal and occasional shipment of coke, limestone, and ore; bunkering vessels.
TYPE OF CONSTRUCTION	Pier formed by steel sheet pile retaining walls with solid fill; fronted by timber fender system.	Concrete bulkhead supported on timber piling over part steel and part timber sheet pile retaining walls with solid fill.	Pier formed by concrete bulkhead supported on timber piling over part steel and part timber sheet pile retaining walls with solid fill.

DESCRIPTION	Face	East side	West side	Face	Head of slip	Face	East side	West side
Dimensions (Feet)	125	1,202	1,054	139+150+1760	70+160+70	50+202+72	1,398	1,502+491
Depth Alongside at LWD Do.	-	27	27	27	27	27	27	27
Breasting Distance Do.	-	1,202	1,054	1,760	70+160+70	-	1,398	1,502+491
Total Berthing Space Do.	-	1,202	1,054	1,760	300	1,502	1,398	1,502+491
Width of Apron Do.	Open.			Open.		Open.		
Height of Deck at LWD Do.	10			12		12		
Load Capacity (Lbs. per Sq. Ft.)	-			-		-		
Lighted or Unlighted	Lighted.			Lighted.		Lighted.		

MECHANICAL HANDLING FACILITIES	Four inoperable, traveling, electric, bullett-type, ore unloaders on east side, 2 with 15-ton and 2 with 17-ton capacity buckets.	Outer portion of 1,760-foot section of face: One traveling, electric, coal-loading tower with 80-foot, hinged-cantilevered boom (76-foot reach) equipped with telescopic chute and automatic trimming head, rate 6,000 tons per hour; tower served by 96-inch electric, belt-conveyor system extending from 6 receiving hoppers located under a 2-car rotary dumper in rear. Inner portion of 1,760-foot section of face: 3 inactive, traveling, electric, bullett-type, ore unloaders.	One electric car dumper on east side (No. 1)- inactive at time of survey- and one west side (No. 2), with maximum capacity of thirty 50- to 120-ton cars per hour.
RAILWAY CONNECTIONS	None. (See Remarks.)	One surface loop track serving tandem rotary dumper connects with separate loaded and empty car storage yards in rear. (See Remarks.)	Each car dumper is served by tracks joining with a separate 125 loaded-car capacity yard and a separate 160 empty-car capacity yard. (See Remarks.)
HIGHWAY CONNECTIONS	Via plant road, asphalt, 10 to 15 feet wide, from Millard Avenue.	Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.	Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.
WATER SUPPLY (For Vessels)	Through 6-inch line.	Through 3-inch line.	Through 3-inch line.
ELECTRIC CURRENT (For Vessels)	A.C., 220 volts.	A.C., 110/220 volts.	A.C., 110/220 volts.
FIRE PROTECTION (Other Than City)	Hydrants, hose, hand extinguishers and security patrol.	One 150,000-gallon-capacity water tower, hydrants, hose, hand extinguishers and security patrol.	One 150,000-gallon-capacity water tower, hydrants, hose, hand extinguishers and security patrol.
REMARKS	Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad.	Tracks serving entire terminal connect with CSX Transport, and Consolidated Rail Corp., via Toledo Terminal Railroad. Face forms 260-foot wide slip with east side of Middle Pier (Ref. No. 6). Toledo office of Great Lakes Towing Company is located in building at rear of inner end of slip.	Tracks serving entire terminal connect with CSX Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad. Inner portion of west side forms 230- to 260-foot wide slip with east side of West Pier (Ref. No. 7); dimensions of concrete bulkhead at head of slip: 20+160+74 feet.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 963	72014 Dock Code No. 920	72014 Dock Code No. 886
REFERENCE NUMBER ON MAP NO.	7	8	9
NAME	Toledo Docks, West Pier.	Toledo-Lucas County Port Authority, Facility No. 1 Wharf.	Great American Lakes Petroleum Products Co. Toledo Dock.
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, east of mouth of Maumee River. Millard Ave. and Otter Creek Road.	Right bank of Maumee River at mouth. 3319 St. Lawrence Drive	Right bank Maumee River, approximately 500 feet above Toledo Terminal Railroad Bridge. 3147 Jessie Street
OWNED BY	Toledo-Lucas County Port Authority.	Toledo-Lucas County Port Authority.	Great American Lakes Petroleum Products Co.
OPERATED BY	CSX Transportation-Toledo Docks.	Toledo-Lucas County Port Authority and Toledo World Terminal, Inc.	Great American Lakes Petroleum Products Co.
PURPOSE FOR WHICH USED	East side: Shipment of coal and petroleum coke, bunkering vessels. West side: Mooring vessels.	Receipt and shipment of conventional and containerized general cargo and miscellaneous dry bulk materials potash, scrap metal, pig iron and liquid fertilizer.	Receipt and shipment of petroleum products. including coke, coke breeze, urea, fertilizer; receipt of molasses and
TYPE OF CONSTRUCTION	Pier formed by concrete retaining walls with solid fill supported by timber piles on east side, face, and outer 467-foot portion of west side; natural bank on inner 1,245-foot portion of west side.	Concrete-capped, steel sheet pile bulkhead with asphalt-surfaced solid fill; fronted by rubber tire fender system.	Face: timber pile, timber-decked offshore wharf with two 30- by 5-foot approaches, fronted by timber fender system; one timber breasting dolphin on each side in line with face. Upper side: steel sheet pile bulkhead with solid fill, forming lower side of 100-foot-wide slip with Ref. No. 10.

DESCRIPTION

	Face	East side	West side
Dimensions (Feet)	50+194+118	1,123	1,712
Depth Alongside at LWD Do.	14-27	27	11-15
Breasting Distance Do.	50+194+118	1,123	1,712
Total Berthing Space Do.	362	1,123	1,712*
Width of Apron Do.	Open.		
Height of Deck at LWD Do.	12		
Load Capacity (Lbs.per Sq.Ft.)	-		
Lighted or Unlighted	Lighted.		

Face	Upper side
4,196	70
27	-
4,196	-
4,200	-
45,90 & open	
11	
-	
Lighted.	

Face	Upper side
90	300+40+75
18	13
252w/dolphins	-
300	-
10	
6	
-	
Lighted.	

TRANSIT SHEDS

Number and Description	None.	Two - concrete walls, steel frame, metal-covered; concrete floors.	None.
Length and Width (Feet)		Shed A: 779 by 141	Shed B: 283 by 180
Height Inside Do.		23	23
Floor Area for Cargo (Sq. Ft.)		85,000	37,500
Load Capacity (Lbs.per Sq.Ft.)		Unlimited.	Unlimited.
Cargo Doors		Shipside: "A" 9;"B" 4; all 19x15. Rear: "A" 11, 19x15;"B" 4, 17x15. Lower end: "A" 2, 19X15;"B" none. Upper end: "A" none; "B" 1, 17x24.	

MECHANICAL HANDLING FACILITIES	One electric car dumper (No. 3) on east side, maximum rate thirty 50- o to 120-ton cars per hour.	Toledo-Lucas County Port Authority: Two traveling, revolving, full- with lift capacity of 110 tons at radius; and one diesel-electric with foot radius and 36 tons at 85-foot Four diesel electric, traveling, 2 with lift capacities of 32 and 25 and 2 with lift capacities of 25 and respectively; two 35-ton, diesel, boom. Cranes are also equipped with 8-cubic yard buckets and two 83- and portable belt stackers and thirty-	None. portal, gantry cranes: one electric 35-foot radius & 50 tons at 85-foot lift capacity of 72 1/2 tons at 35- radius. Toledo World Terminal, Inc.: revolving,full-portal,gantry cranes; tons at 30- and 45-foot radius, 20 tons at 35- and 45-foot radius, crawler cranes each with 100-foot one 15-, one 12-, one 11-, and two two 72-inch electric magnets; 3 three 4- to 25-ton forklift trucks.
RAILWAY CONNECTIONS	Car-thawing plant and car dumper served by tracks joining with 140 loaded-car capacity yard and 190 empty-car capacity yard.	Two surface tracks on apron; one platform-level track along rear of each transit shed; single tracks serving foreign trade zone warehouse and 6-car-capacity tank car loading rack at molasses terminal connect with Chesapeake and Ohio Railway.	One surface track serves 2-car capacity, tank car loading rack at terminal in rear; connects with Norfolk and Western Railway.
HIGHWAY CONNECTIONS	Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.	Via St. Lawrence Drive, asphalt, 50 feet wide, from Front Street, concrete, 46 feet wide.	Via Millard Avenue, asphalt, 32 feet wide, from Front Street, asphalt, 40 feet wide.
WATER SUPPLY (For Vessels)	Through one 2-inch line.	Through one 1 1/2-inch line.	Through one 2 1/2-inch line.
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	None.	A.C., 110/220/440 volts.
FIRE PROTECTION (Other Than City)	One 150,000-gallon-capacity water tower, hydrants, hose, hand extin- extinguishers and security patrol.	Hydrants, hose, hand extinguishers and security patrol.	Foam system, chemical carts, hand extinguishers, hydrants, hose, and 6-inch suction line.
REMARKS	Inner end of east side forms a 300-foot-wide slip with rear of Toledo-Lucas County Port Authority Terminal No. 1 complex. Idle lake freighters are moored 2- and 3- abreast in slip.	Shed C, a steel frame metal-covered storage building located adjacent to Shed B, has capacity for 50,000 tons of bulk fertilizer. Rail cars and trucks are loaded via a 36-inch inclined conveyor extending from building to wharf apron, average rate 6,000 tons per hour. Shed D, a concrete building in rear, has storage area for miscellaneous items lease at time of survey. Industrial pipelines extend from south portion gallons. International Warehouse approximately 300 feet in rear of	Two 10-, one 8- and four 6-inch pipelines extend from wharf to 15 steel storage tanks, total capacity 350,000 barrels. One 6-inch pipe- line extends from face to one 10,000-barrel ballast tank. Petro- leum products also received at terminal by 10-inch pipeline operated by Buckeye Pipeline Co. An additional 30,000-square foot Molasses, Div. of Westway Trading of wharf to 14 molasses storage Services operates Foreign Trade transit shed A. Approximately 95

approximately 40,000 square feet of steel storage warehouse was under Corp.: One 12/14 and two 6-inch tanks, total capacity 4,600,000 Zone No. 8 Warehouse (SW Ref. No.1) acres of open storage area is available at termina..

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 882			72014 Dock Code No. 838			72014 Dock Code No. 81c	
REFERENCE NUMBER ON MAP NO.	10			11			12	
NAME	Standard Oil Co., Toledo Refinery Marine Dock.			Interlake Dock.			Merce Industries Toledo Shipyard Slip.	
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 800 feet above Toledo Terminal Railroad bridge. Jessie Street and Millard Avenue.			Right bank Maumee River, approximately 1,900 feet above Norfolk and Western Railway Bridge. 2401 Front Street			Right bank Maumee River, approximately 1,500 feet above Norfolk and Western Railway Bridge. 2245 Front Street.	
OWNED BY	Norfolk and Western Railway Co.			Toledo-Lucas County Port Authority.			Toledo-Lucas County Port Authority.	
OPERATED BY	Standard Oil Co. of Ohio.			Not operated.			Merce Industries Inc.	
PURPOSE FOR WHICH USED	Shipment and occasional receipt of petroleum products.			Not used.			Mooring vessels for outfitting and repair; mooring company-owned floating equipment.	
TYPE OF CONSTRUCTION	Steel sheet pile retaining walls with solid fill along face, outer 291-foot portion of lower side and outer 322-foot portion of upper side; natural bank along remaining portions of lower and upper sides. Timber fender system fronts retaining walls.			Concrete bulkhead supported on timber piling over timber sheet pile retaining wall with solid fill.			Slip formed by steel sheet pile bulkhead with solid fill.	
DESCRIPTION	Face	Lower side	Upper side	Face	Upper side		Lower side	Upper side
Dimensions (Feet)	257	291+60	322+118	1,727	45		400+27	290+103
Depth Alongside at LWD Do.	21	13	10-20	20-22	-		12-15	12-15
Breasting Distance Do.	257	351	500	1,725	-		445+27	290+103
Total Berthing Space Do.	300	351	500	1,725	-		445+27	290+103
Width of Apron Do.	Open.			Open.			Open.	
Height of Deck at LWD Do.	7.5			10			8	
Load Capacity (Lbs. per Sq. Ft.)	-			-			-	
Lighted or Unlighted	Lighted.			Lighted.			Lighted.	
MECHANICAL HANDLING FACILITIES	Two hand-operated davits for launching small craft for cleaning oil spills.			None.			One 20-ton, diesel, mobile hoist with 52-foot telescopic boom. Additional rental equipment is available as required.	
RAILWAY CONNECTIONS	None.			None.			None.	
HIGHWAY CONNECTIONS	Via Millard Avenue, asphalt, 32 feet wide, from Front Street, asphalt, 40 feet wide.			Via driveway from Front Street, asphalt, 40 feet wide.			Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	
WATER SUPPLY (For Vessels)	Through 3/4-inch hose.			Through one 4-inch line.			Through 4-inch line.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/440 volts.			None.			A.C., 110/220/440 volts; D.C., 110/220 volts.	
FIRE PROTECTION (Other Than City)	Foam system, hose cart, hand extinguishers, and one 6-inch suction line for fire department pumper truck.			None.			Hydrants, hand extinguishers, and security patrol.	
REMARKS	Three 12- and two 10-inch pipelines with 8-inch connections at two loading stations at face extend to pier from 21 steel storage tanks at company-owned refinery approximately 1 1/2 miles inland, total capacity 1,021,000 barrels.			At time of survey (1988), future of wharf as a docking facility was not known.			Slip is 230 feet wide at the entrance and approximately 70 feet wide at the inner end. Sides of slip are equipped with lines for supplying compressed air, oxygen, and acetylene gas.	

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 820	72014 Dock Code No. 810	72014 Dock Code No. 812	
REFERENCE NUMBER ON MAP NO.	13	14	15	
NAME	Medusa Cement Co. Toledo Terminal Wharf.	Merce Industries Toledo Shipyard Dock.	Nabisco Toledo Flour Mill Wharf.	
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 0.6 mile above Norfolk and Western Railway Bridge. 2301 Front Street.	Right bank Maumee River, approximately 0.8 mile below Craig Memorial (Interstate Highway 280) Bridge. 2245 Front Street.	Right bank Maumee River, approximately 0.7 mile below Craig Memorial (Interstate Highway 280) Bridge. 2221 Front Street.	
OWNED BY	Toledo-Lucas County Port Authority.	Toledo-Lucas County Port Authority.	Nabisco, Inc.	
OPERATED BY	Medusa Cement Co.	Merce Industries Inc.	Not operated.	
PURPOSE FOR WHICH USED	Receipt of bulk cement.	Mooring vessels for outfitting, conversion, and repair.	Not used.	
TYPE OF CONSTRUCTION	Concrete bulkhead supported by timber piles with concrete-surfaced solid fill.	Two sections of concrete bulkhead supported by timber piles, solid fill; separated by entrance to graving dock.	Part steel pile- and part concrete-bulkhead, all with concrete-surfaced solid fill.	
DESCRIPTION	Face	Face	Face	Upper side
Dimensions (Feet)	250	242+118	85	25
Depth Alongside at LWD Do.	21	19	17	-
Breasting Distance Do.	250	460	85	-
Total Berthing Space Do.	568 w/adjacent wharves	800 w/adjacent wharves	85	-
Width of Apron Do.	Open.	Open.	Open.	
Height of Deck at LWD Do.	8	8	8	
Load Capacity (Lbs. per Sq. Ft.)	-	-	-	
Lighted or Unlighted	Lighted.	Lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	Elevated receiving hopper at face is served by a 12-inch air-slide conveyor extending to storage silos in rear, rate 800 tons per hour.	Two electric, traveling, full-portal, gantry cranes, each with 110-foot boom and capacity of 50 tons at 50-foot radius; and use of crane described under Ref. No. 12.	None.	
RAILWAY CONNECTIONS	None.	Trackage serving shipyard in rear connects with Norfolk and Western Railway.	Sixteen surface tracks serve car dumper and carloading spouts at grain elevator in rear; connect with Norfolk and Western Railway.	
HIGHWAY CONNECTIONS	Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	Via plant roads, paved, various widths, from Front Street, asphalt, 40 feet wide.	
WATER SUPPLY (For Vessels)	Through 3-inch line.	Through 4-inch line.	Through one 4-inch line serving hydrant in rear.	
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.	A.C., 110/220/440 volts; D.C. 110/220 volts.	None.	
FIRE PROTECTION (Other Than City)	Hydrants, hand extinguishers, and security patrol.	Hydrants, hand extinguishers, and security patrol.	Automatic detection system, pump, hydrants hand extinguishers, and security patrol.	
REMARKS	Two concrete silos at rear have total capacity for 14,000 tons.	Berthing space includes widths of entrances to graving docks No. 1 between wharf sections, and No.2 between upper section and adjacent wharf (Ref. No. 13) as well as that wharf which is used by reciprocal berthing arrangement. Wharf is equipped with lines for supplying compressed air, oxygen, and acetylene gas.	Merce Industries Inc. occasionally uses wharf for berthing vessels undergoing repairs at adjacent shipyard. Wharf is fenced. Nabisco, Inc. owns and operates a flour mill and grain elevator with storage capacity for 6,000,000 bushels in rear; grain is received by rail and truck and flour is shipped by truck.	

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 777			72014 Dock Code No. 777		72014 Dock Code No. 748
REFERENCE NUMBER ON MAP NO.	16			17		18
NAME	Sun Refining and Marketing Co., Downstream Hocking Valley Pier.			Sun Refining and Marketing Co., Upstream Hocking Valley Pier.		Toledo Edison Co. Acme Station Slip.
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 700 feet below Craig Memorial (Interstate Highway 280) Bridge. 1761 Front Street.			Right bank Maumee River, approximately 100 feet below Craig Memorial (Interstate Highway 280) Bridge. 1641 Front Street.		Right bank Maumee River, lower side of slip, approximately 0.2 mile below Craig Memorial (Interstate Highway 280) Bridge. 1401 Front Street.
OWNED BY	Sun Refining and Marketing Co.			Sun Refining and Marketing Co.		The Toledo Edison Co.
OPERATED BY	Merce Industries Inc.			Sun Refining and Marketing Co.		Seneca Petroleum Co. Inc.
PURPOSE FOR WHICH USED	Mooring vessels for storage, maintenance, and repair.			Receipt of refinery feed stock; shipment of fuel oil and benzene.		Receipt of asphalt by barge.
TYPE OF CONSTRUCTION	Pier formed by concrete retaining walls supported by timber piles.			Concrete bulkhead supported by timber piles, solid fill.		Row of 5 timber breasting dolphins with 30- by 2-foot approach. Berth is constricted to 95-foot width by a parallel row of timber dolphins.
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Dolphins
Dimensions (Feet)	170	850+105	840+100	335	557+168+193	200
Depth Alongside at LWD Do.	8	18-27	13	27-27	18	10-15
Breasting Distance Do.	-	850+105	850+105	-	557+168+193	200
Total Berthing Space Do.	-	850+105	850+105		918	200
Width of Apron Do.	Open.			Open.		Open.
Height of Deck at LWD Do.	12			12		12
Load Capacity (Lbs. per Sq. Ft.)	-			-		-
Lighted or Unlighted	Lighted.			Lighted.		Lighted.
MECHANICAL HANDLING FACILITIES	Four inoperative, hand-operated, mast-and-boom derricks on upper side, each with 18-foot boom for handling hose.			Four hand-operated, mast-and-boom derricks on lower side, each with 20-foot boom for handling hose.		None.
RAILWAY CONNECTIONS	None.			None.		Trackage serving rotary dumper at open coal storage area and electric power plant in rear connects with Consolidated Rail Corp.
HIGHWAY CONNECTIONS	Via private road, cinder and gravel, various widths, from foot of Consaul Street, asphalt, 35 feet wide.			Via private road, cinder and gravel, various widths, from foot of Consaul Street, asphalt, 38 feet wide.		Via plant road, from Front Street, asphalt, 45 feet wide.
WATER SUPPLY (For Vessels)	None.			Through 2 1/2-inch line.		None.
ELECTRIC CURRENT (For Vessels)	A.C., 110/480 volts.			A.C., 110 volts.		None.
FIRE PROTECTION (Other Than City)	Hand extinguishers and one 6-inch suction line for fire department pumper truck.			Hand extinguishers, chemical carts, and one 6-inch suction line for fire department pumper truck.		Plant fire truck, hydrant, hose and security patrol.
REMARKS	Three blanked, 8-inch pipeline connections at 4 separate locations on upper side, connect with pipelines and storage tanks described under Ref. No. 17. One 6-inch ballast pipeline, with one 6-inch connection at each of the 4 locations, connects with ballast pipeline serving Ref. No. 17 and extends to one 5,000- barrel storage tank at rear of lower side of Ref. No. 17. Upper side forms 250-foot-wide slip with lower side of Ref. No. 17.			One 12-, one 10-, one 8-, and one 6-inch pipeline connections at 4 separate locations on lower side connect with pipelines serving Ref. No. 16 at manifold in rear. One 12-, one 8-, and one 6-inch pipelines extend to manifold from 28 steel storage tanks at company-owned refinery, approximately 2 miles inland, total capacity 2,300,000 barrels. In addition, one 12-inch pipeline extends to manifold from 3 storage tanks located 600 feet north of Front and Consaul Streets, total capacity 175,000 barrels. One 6-inch ballast pipeline with one 6-inch connection at each of the 4 locations joins ballast pipeline described under Ref. No. 16.		One 8-inch steam-traced pipeline extends from dolphin along approach to one 47,600-barrel storage tank in rear.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 700		72014 Dock Code No. 697	72014 Dock Code No. 603
REFERENCE NUMBER ON MAP NO.	19		20	21
NAME	City of Toledo, Department of Streets, Bridges, and Harbor Wharf.		City of Toledo East Side Mooring Dock.	Mid-States Terminals Wharf.
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 1,000 feet above Cherry Street Bridge. 26 Main Street		Right bank, Maumee River above and below Anthony Wayne Bridge. International Park	Left bank, Maumee River, approximately 1,000 feet above Consolidated Rail Corp. bridge. 1308 Miami Street.
OWNED BY	City of Toledo.		City of Toledo.	Mid-States Terminals, subsidiary of Countrymark Inc.
OPERATED BY	City of Toledo.		City of Toledo.	Mid-States Terminals, subsidiary of Countrymark Inc.
PURPOSE FOR WHICH USED	Mooring city-owned, excursion and miscellaneous vessels.		Mooring lake freighter "Willis S. Boyer" on exhibition; mooring vessels during closed navigation season; landing for harbor excursion boats.	Shipment of grain.
TYPE OF CONSTRUCTION	Concrete bulkhead supported by timber piles with asphalt-surfaced solid fill; timber bulkhead along lower side.		Concrete bulkhead supported by timber piles, solid fill.	Lower 120+710-foot portion: Steel sheet pile bulkhead with asphalt-surfaced solid fill. Center 800-foot portion: Concrete bulkhead supported on timber piling over timber sheet pile retaining wall. Upper 160-foot portion: Steel sheet pile bulkhead with asphalt-surfaced solid fill. Lower section fronted by rubber- cushioned timber and steel fender system.
DESCRIPTION	Face	Lower side	Face	Face
Dimensions (Feet)	820+222	35+170	1,800+682+325	120+710+960
Depth Alongside at LWD Do.	15	8-14	16-21	27
Breasting Distance Do.	820+222	35+50	1,800+682+325	120+710+96
Total Berthing Space Do.	1,042	35+50	2,807	120+710+96
Width of Apron Do.	Open and 60.		Open.	20, 26, & open
Height of Deck at LWD Do.	10		16 and 8.	10
Load Capacity (Lbs. per Sq. Ft.)	-		-	-
Lighted or Unlighted	Lighted.		Partly lighted.	Lighted.
MECHANICAL HANDLING FACILITIES	One 40-ton, electric, stiff-leg derrick with 60-foot boom mounted on bull wheel and having an outboard reach of 40 feet; one 25-ton, gasoline, mobile crane with 60-foot boom; and one gasoline forklift truck.		None.	Ten vessel-loading spouts, average rate 98,000 bushels per hour combined, and three additional independently-operated loading spouts, rate 80,000 bushels per hour combined.
RAILWAY CONNECTIONS	None.		None.	Four surface tracks at rear of elevator, total capacity 70 cars, join with 2 tracks serving 2 car pits and 3 carloading spouts in car shed; connect with CSX Rail Transport.
HIGHWAY CONNECTIONS	Via road, asphalt, 18 feet wide, from Main Street approach to Cherry Street Bridge.		Via road, asphalt, 30 feet wide, extending from Main Street.	Via plant road to wharf, asphalt, 14 to 22 feet wide, from Miami Street.
WATER SUPPLY (For Vessels)	Through 3- and 2-inch lines.		Through 4-inch line with 3-inch connections.	Through 1- and 2-inch lines.
ELECTRIC CURRENT (For Vessels)	A.C., 110/220/440 volts.		A.C., 110/220 volts.	A.C., 110/220/440.
FIRE PROTECTION (Other Than City)	Sprinkler system in building, hydrants, hose, and hand extinguishers.		Hand extinguishers.	Hydrants, hose, and hand extinguishers.
REMARKS	Former 425- by 120-foot transit shed is used by the Department of Streets, Bridges, and Harbor as warehouse and garage; a small addition on lower side is used as office by the City of Toledo, Pollution Control Division. One 45,000-square foot, asphalt- paved, open storage area at upper end of wharf has capacity for approximately 40,000 tons of salt. Small vessels berth 2 abreast at 35-foot section of lower side against lower level timber walkways. Excursion vessel berths against 50- by 15-foot steel float fronting 135-foot section. A small boat marina is located in cove adjacent to lower side of wharf.		Vessels can moor under the high-level Anthony Wayne Bridge.	Grain elevator at rear consists of one unit with 96 concrete silos and 68 interstitial bins and one unit with 30 concrete silos and 30 interstitial bins, total capacity 9,000,000 bushels.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 452		72014 Dock Code No. 450		72014 Dock Code No. 446	
REFERENCE NUMBER ON MAP NO.	22		23		24	
NAME	Cargill, Toledo Elevator Dock.		Kuhlman Corp., Upper Dock.		Kuhlman Corp., Yard No. 1 Dock.	
LOCATION ON WATERFRONT	Left bank, Maumee River, below Interstate Highway 75 Bridge. 125 Edwin Drive.		Right bank Maumee River, approximately 1,500 feet below Interstate Highway 75 Bridge. 444 Kuhlman Drive.		Right bank Maumee River, approximately 0.3 mile above Consolidated Rail Corp. bridge. 444 Kuhlman Drive.	
OWNED BY	Cargill, Inc.		Kuhlman Corp.		Kuhlman Corp.	
OPERATED BY	Cargill, Inc.		Kuhlman Corp.		Kuhlman Corp.	
PURPOSE FOR WHICH USED	Shipment of grain.		Receipt of dry bulk fertilizer and salt by self-unloading vessel; mooring grain vessels awaiting shipping berths; mooring miscellaneous vessels.		Receipt of sand and gravel; mooring floating equipment at rear of face.	
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead with asphalt-surfaced solid fill; one steel sheet pile, cellular breasting dolphin with separate steel shore connection on each side in line with face.		Row of 3 steel sheet pile, concrete-capped, cellular breasting dolphins fronted by rubber-cushioned timber and steel fenders, each with 50-foot steel catwalk approach.		Concrete-capped, solid-filled, steel sheet pile cellular type, offshore wharf with causeway approach to upper end.	
DESCRIPTION	Face	Sides	Breasting dolphins		Face	Rear of face
Dimensions (Feet)	270	60, each	340		265	230
Depth Alongside at LWD Do.	28	-	22		18	6
Breasting Distance Do.	590 w/dolphins	-	340		265	230
Total Berthing Space Do.	730	-	340		265	230
Width of Apron Do.	60		Open.		30	
Height of Deck at LWD Do.	8		10, bank		6	
Load Capacity (Lbs. per Sq. Ft.)	-		-		-	
Lighted or Unlighted	Lighted.		Partly lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	One electric, straight line, conveyor boom having 70-foot outboard reach and equipped with loading spout mounted on full portal gantry which travels full length of wharf, loading rate 30,000 bushels per hour.		Receiving hopper on bank is served by a 48-inch electric belt conveyor extending into storage building in rear, rate 2,000 tons per hour.		One diesel crawler crane with 70-foot boom equipped with 4-cubic yard clamshell bucket, unloads materials from barges into a 15-cubic yard receiving hopper on wharf; a 36-inch, electric, belt-conveyor system extends from hopper via suspension bridge over slip at rear of face to a mobile radial stacker serving open storage area on shore at rear, rate 400 tons per hour. One 5-cubic yard, diesel, front-end loader serves open storage area.	
RAILWAY CONNECTIONS	Two surface tracks, total capacity 100 cars, serve undertrack pit and loading spout in car shed at rear of grain elevator; connect with Norfolk and Western Railway.		One surface track serving undertrack pit and loading spout in rear connects with Norfolk and Western Railway.		One surface track serving plant in rear connects with Norfolk and Western Railway.	
HIGHWAY CONNECTIONS	Via Edwin and Kuhlman Drives, each concrete, 24 feet wide, from South Avenue.		Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.		Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.	
WATER SUPPLY (For Vessels)	Through 4-inch line with 2 1/2-inch connections.		None.		None.	
ELECTRIC CURRENT (For Vessels)	None.		None.		A.C., 110 volts.	
FIRE PROTECTION (Other Than City)	Hydrants, hand extinguishers, and 8-inch suction lines for fire department pumper.		None.		Hand extinguishers.	
REMARKS	Grain elevator at rear consists of 12 concrete silos with 5 interstitial bins and 7 steel storage tanks, total capacity 5,800,000 bushels. Additional 4,400,000 bushels of grain storage is available at Cargill Elevator located at Maumee, Ohio, approximately 9 miles distant.		Timber storage building at rear has storage capacity for 165,000 tons of fertilizer. Concrete-paved open storage area has capacity for 100,000 tons of fertilizer and 50,000 tons of salt.		Rear of face forms 60-foot wide slip with stone-revetted bank. Open storage area at rear has capacity for 100,000 tons.	

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 990		72014 Dock Code No. 999	72014 Dock Code No. 999	
REFERENCE NUMBER ON MAP NO.	1		2	3	
NAME	Toledo Edison Co., Bay Shore Station Wharf.		Lakefront Pellet Terminal Dock.	Toledo Docks, Pier No. 2.	
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, inner portion of east side of private slip, west of foot of Wynn Road extended. 4701 Bayshore Road		Oregon, south shore of Maumee Bay, west side of slip east of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.	Oregon, south shore of Maumee Bay, approximately 500 feet west of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.	
OWNED BY	The Toledo Edison Co.		CSX Transportation, Inc.; and Consolidated Rail Corp.	CSX Transportation, Inc.; and Consolidated Rail Corp.	
OPERATED BY	Not operated.		Toledo Ore Railroad Co.	CSX Transportation-Toledo Docks.	
PURPOSE FOR WHICH USED	Not used.		Receipt of iron ore pellets by self-unloading vessel.	Mooring vessels.	
TYPE OF CONSTRUCTION	Steel sheet pile cellular bulkhead with solid fill; 3 timber breasting dolphins in line with face.		Steel sheet pile retaining walls with solid fill.	Pier formed by steel sheet pile retaining walls with solid fill; fronted by timber fender system.	
DESCRIPTION	Face	Sides	Face	Face	East side
Dimensions (Feet)	208	40, each	1,133+694+288	100	1,815
Depth Alongside at MLW Do.	18-20	-	27	-	27
Breasting Distance Do.	613w\dolphs.	-	2,105	-	1,815
Total Berthing Space Do.	613	-	2,105	-	1,815
Width of Apron Do.	Open.		80 and open.	Open.	
Height of Deck at MLW Do.	5.5		10	10	
Load Capacity (Lbs. per Sq. Ft.)	-		-	-	
Lighted or Unlighted	Partly lighted.		Lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	None.		Self-unloading vessels serve a temporary open storage area at rear of center section of face; 16 gates under temporary storage serve a 48-inch electric belt conveyor extending to a permanent open storage area approximately 1,000 feet in rear; rate 4,000 tons per hour. Permanent storage area is served by a single belt, rotating, traveling stacker; material is reclaimed by two 13-cubic yard, front-end loaders to a receiving hopper attached to the reversible stacker belt to main conveyor belt extending to a transfer station and rail car loading tower; rate forty 1,000-ton cars per hour.	One inoperable electric car dumper on each side of pier.	
RAILWAY CONNECTIONS	Surface tracks serve rotary car dumper, adjacent open storage area, and electric power plant; connect with Norfolk and Western Railway.		Toledo Ore Railroad Co: One surface track at iron ore pellet loading tower extends from storage tracks with capacity for approximately 250 cars. (See Remarks.)	None.	
HIGHWAY CONNECTIONS	Via plant road, from Bay Shore Road, concrete and asphalt, 24 feet wide.		Via plant road, asphalt, 10 to 15 feet wide, from Otter Creek and Bay Shore Roads, each asphalt, 24 feet wide.	Via plant road, asphalt, 10 to 15 feet wide, from Millard Avenue.	
WATER SUPPLY (For Vessels)	None.		Through 1-1/4-inch line.	Through 6-inch line.	
ELECTRIC CURRENT (For Vessels)	None.		A.C., 480 volts.	A.C., 220 volts.	
FIRE PROTECTION (Other Than City)	Hydrants, hose and hand extinguishers.		Hydrants, hose, hand extinguishers and security patrol.	Hydrants, hose, hand extinguishers and security patrol.	
REMARKS	A 300,000-ton, open coal storage area located on opposite side of Bay Shore Road is served by rail. Two 48-inch electric belt conveyors extend to plant from storage area, rates 600 and 1,000 tons per hour.		Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp, via Toledo Terminal Railroad. Temporary storage area at rear of face has capacity for 123,000 tons of iron ore pellets; permanent storage area in rear has capacity for 800,000 tons.	Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad.	

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 999			72014 Dock Code No. 963		72014 Dock Code No. 963		
REFERENCE NUMBER ON MAP NO.	4			5		6		
NAME	Toledo Docks, Pier No. 3.			Toledo Docks, Main Coal Dock.		Toledo Docks, Middle Pier.		
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, approximately 1,000 feet west of foot of Alabama Street extended. Millard Avenue and Otter Creek Roads.			Oregon, south shore of Maumee Bay, east side of Slip No. 1, approximately 1,200 feet east of the mouth of the Maumee River. Millard Avenue and Otter Creek Roads.		Oregon, south shore of Maumee Bay, approximately 600 feet east of the mouth of the Maumee River. Millard Avenue and Otter Creek Roads.		
OWNED BY	CSX Transportation, Inc; and Consolidated Rail Corp.			Toledo-Lucas County Port Authority.		Toledo-Lucas County Port Authority.		
OPERATED BY	CSX Transportation-Toledo Docks.			CSX Transportation-Toledo Docks.		CSX Transportation-Toledo Docks.		
PURPOSE FOR WHICH USED	Mooring vessels.			Shipment of coal and petroleum coke; occasional bunkering; mooring harbor tugs at head of slip.		Shipment of coal and occasional shipment of coke, limestone, and ore; bunkering vessels.		
TYPE OF CONSTRUCTION	Pier formed by steel sheet pile retaining walls with solid fill; fronted by timber fender system.			Concrete bulkhead supported on timber piling over part steel and part timber sheet pile retaining walls with solid fill.		Pier formed by concrete bulkhead supported on timber piling over part steel and part timber sheet pile retaining walls with solid fill.		
DESCRIPTION	Face	East side	West side	Face	Head of slip	Face	East side	West side
Dimensions (Feet)	125	1,202	1,054	139+150+1760	70+160+70	50+202+72	1,398	1,502+491
Depth Alongside at LWD Do.	-	27	27	27	27	27	27	27
Breasting Distance Do.	-	1,202	1,054	1,760	70+160+70	-	1,398	1,502+491
Total Berthing Space Do.	-	1,202	1,054	1,760	300	1,502	1,398	1,502+491
Width of Apron Do.	Open.			Open.		Open.		
Height of Deck at LWD Do.	10			12		12		
Load Capacity (Lbs. per Sq. Ft.)	-			-		-		
Lighted or Unlighted	Lighted.			Lighted.		Lighted.		
MECHANICAL HANDLING FACILITIES	Four inoperable, traveling, electric, hulett-type, ore unloaders on east side, 2 with 15-ton and 2 with 17-ton capacity buckets.			Outer portion of 1,760-foot section of face: One traveling, electric, coal-loading tower with 80-foot, hinged-cantilevered boom (76-foot reach) equipped with telescopic chute and automatic trimming head, rate 8,000 tons per hour; tower served by 96-inch electric, belt-conveyor system extending from 6 receiving hoppers located under a 2-car rotary dumper in rear. Inner portion of 1,760-foot section of face: 3 inactive, traveling, electric, hulett-type, ore unloaders.		One electric car dumper on east side (No. 1)- inactive at time of survey- and one west side (No. 2), with maximum capacity of thirty 50- to 120-ton cars per hour.		
RAILWAY CONNECTIONS	None. (See Remarks.)			One surface loop track serving tandem rotary dumper connects with separate loaded and empty car storage yards in rear. (See Remarks.)		Each car dumper is served by tracks joining with a separate 125 loaded-car capacity yard and a separate 160 empty-car capacity yard. (See Remarks.)		
HIGHWAY CONNECTIONS	Via plant road, asphalt, 10 to 15 feet wide, from Millard Avenue.			Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.		Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.		
WATER SUPPLY (For Vessels)	Through 6-inch line.			Through 3-inch line.		Through 3-inch line.		
ELECTRIC CURRENT (For Vessels)	A.C., 220 volts.			A.C., 110/220 volts.		A.C., 110/220 volts.		
FIRE PROTECTION (Other Than City)	Hydrants, hose, hand extinguishers and security patrol.			One 150,000-gallon-capacity water tower, hydrants, hose, hand extinguishers and security patrol.		One 150,000-gallon-capacity water tower, hydrants, hose, hand extinguishers and security patrol.		
REMARKS	Tracks serving entire terminal connect with CSX Rail Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad.			Tracks serving entire terminal connect with CSX Transport, and Consolidated Rail Corp., via Toledo Terminal Railroad. Face forms 260-foot wide slip with east side of Middle Pier (Ref. No. 6). Toledo office of Great Lakes Towing Company is located in building at rear of inner end of slip.		Tracks serving entire terminal connect with CSX Transport, and Consolidated Rail Corp. via Toledo Terminal Railroad. Inner portion of west side forms 230- to 260-foot wide slip with east side of West Pier (Ref. No. 7); dimensions of concrete bulkhead at head of slip: 20+160+74 feet.		

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 963	72014 Dock Code No. 920	72014 Dock Code No. 886
REFERENCE NUMBER ON MAP NO.	7	8	9
NAME	Toledo Docks, West Pier.	Toledo-Lucas County Port Authorit Facility No. 1 Wharf.	Great American Lakes Petroleum Products Co. Toledo Dock.
LOCATION ON WATERFRONT	Oregon, south shore of Maumee Bay, east of mouth of Maumee River. Millard Ave. and Otter Creek Road.	Right bank of Maumee River at mouth. 3319 St. Lawrence Drive	Right bank Maumee River, approximately 500 feet above Toledo Terminal Railroad Bridge. 3147 Jessie Street
OWNED BY	Toledo-Lucas County Port Authority.	Toledo-Lucas County Port Authority.	Great American Lakes Petroleum Products Co.
OPERATED BY	CSX Transportation-Toledo Docks.	Toledo-Lucas County Port Authority and Toledo World Terminal, Inc.	Great American Lakes Petroleum Products Co.
PURPOSE FOR WHICH USED	East side: Shipment of coal and petroleum coke, bunkering vessels. West side: Mooring vessels.	Receipt and shipment of conventional and containerized general cargo and miscellaneous dry bulk materials potash, scrap metal, pig iron and liquid fertilizer.	Receipt and shipment of petroleum products. including coke, coke breeze, urea, fertilizer; receipt of molasses and
TYPE OF CONSTRUCTION	Pier formed by concrete retaining walls with solid fill supported by timber piles on east side, face, and outer 467-foot portion of west side; natural bank on inner 1,245-foot portion of west side.	Concrete-capped, steel sheet pile bulkhead with asphalt-surfaced solid fill; fronted by rubber tire fender system.	Face: timber pile, timber-decked offshore wharf with two 30- by 5-foot approaches, fronted by timber fender system; one timber breasting dolphin on each side in line with face. Upper side: steel sheet pile bulkhead with solid fill, forming lower side of 100-foot-wide slip with Ref. No. 10.
DESCRIPTION			
Dimensions (Feet)	Face: 50+194+110	Face: 4,196	Face: 90
Depth Alongside at LWD Do.	14-27	27	18
Breasting Distance Do.	50+194+110	4,196	252w/dolphins
Total Berthing Space Do.	362	4,200	300
Width of Apron Do.	Open.	45,90 & open	10
Height of Deck at LWD Do.	12	11	6
Load Capacity (Lbs.per Sq.Ft.)	-	-	-
Lighted or Unlighted	Lighted.	Lighted.	Lighted.
	East side: 1,123 / 27 / 1,123 / Open. / 12 / - / Lighted.	Upper side: 70 / - / - / - / - / - / -	Upper side: 300+40+75 / 13 / - / - / - / - / -
	West side: 1,712 / 11-15 / 1,712 / 1,712*		
TRANSIT SHEDS Number and Description	None.	Two - concrete walls, steel frame, metal-covered; concrete floors.	None.
Length and Width (Feet)		Shed A: 779 by 141	Shed B: 283 by 180
Height Inside Do.		23	23
Floor Area for Cargo (Sq. Ft.)		85,000	37,500
Load Capacity (Lbs.per Sq.Ft.)		Unlimited.	Unlimited.
Cargo Doors		Shipside: "A" 9;"B" 4; all 19x15. Rear: "A" 11, 19x15;"B" 4, 17x15. Lower end: "A" 2, 19X15;"B" none. Upper end: "A" none; "B" 1, 17x24.	
MECHANICAL HANDLING FACILITIES	One electric car dumper (No. 3) on east side, maximum rate thirty 50- o to 120-ton cars per hour.	Toledo-Lucas County Port Authority: Two traveling, revolving, full- with lift capacity of 110 tons at radius; and one diesel-electric with foot radius and 36 tons at 85-foot Four diesel electric, traveling, 2 with lift capacities of 32 and 25 and 2 with lift capacities of 25 and respectively; two 35-ton, diesel, boom. Cranes are also equipped with 8-cubic yard buckets and two 83- and portable belt stackers and thirty-	None. portal, gantry cranes: one electric 35-foot radius & 50 tons at 85-foot lift capacity of 72 1/2 tons at 35- radius. Toledo World Terminal, Inc.: revolving,full-portal,gantry cranes; tons at 30- and 45-foot radius, 20 tons at 35- and 45-foot radius, crawler cranes each with 100-foot one 15-, one 12-, one 11-, and two two 72-inch electric magnets; 3 three 4- to 25-ton forklift trucks.
RAILWAY CONNECTIONS	Car-thawing plant and car dumper served by tracks joining with 140 loaded-car capacity yard and 180 empty-car capacity yard.	Two surface tracks on apron; one platform-level track along rear of each transit shed; single tracks serving foreign trade zone warehouse and 6-car-capacity tank car loading rack at molasses terminal connect with Chesapeake and Ohio Railway.	One surface track serves 2-car capacity, tank car loading rack at terminal in rear; connects with Norfolk and Western Railway.
HIGHWAY CONNECTIONS	Via terminal road, asphalt, 10 to 15 feet wide, from Millard Avenue.	Via St. Lawrence Drive, asphalt, 50 feet wide, from Front Street, concrete, 46 feet wide.	Via Millard Avenue, asphalt, 32 feet wide, from Front Street, asphalt, 40 feet wide.
WATER SUPPLY (For Vessels)	Through one 2-inch line.	Through one 1 1/2-inch line.	Through one 2 1/2-inch line.
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	None.	A.C., 110/220/440 volts.
FIRE PROTECTION (Other Than City)	One 150,000-gallon-capacity water tower, hydrants, hose, hand extin- extinguishers and security patrol.	Hydrants, hose, hand extinguishers and security patrol.	Foam system, chemical carts, hand extinguishers, hydrants, hose, and 6-inch suction line.
REMARKS	Inner end of east side forms a 300-foot-wide slip with rear of Toledo-Lucas County Port Authority Terminal No. 1 complex. Idle lake freighters are moored 2- and 3- abreast in slip. approximately 40,000 square feet of steel storage warehouse was under Corp.; One 12/14 and two 6-inch tanks, total capacity 4,600,000 Zone No. 8 Warehouse (SW Ref. No.1) acres of open storage area is available at terminal.	Shed C, a steel frame metal-covered storage building located adjacent to Shed B, has capacity for 50,000 tons of bulk fertilizer. Rail cars and trucks are loaded via a 36-inch inclined conveyor extending from building to wharf apron, average rate 6,000 tons per hour. Shed D, a concrete building in rear, has storage area for miscellaneous items lease at time of survey. Industrial pipelines extend from south portion gallons. International Warehouse approximately 300 feet in rear of	Two 10-, one 8- and four 6-inch pipelines extend from wharf to 15 steel storage tanks, total capacity 350,000 barrels. One 6-inch pipeline extends from face to one 10,000-barrel ballast tank. Petroleum products also received at terminal by 10-inch pipeline operated by Buckeye Pipeline Co. An additional 30,000-square foot Molasses, Div. of Westway Trading of wharf to 14 molasses storage Services operates Foreign Trade transit shed A. Approximately 85

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 882			72014 Dock Code No. 838		72014 Dock Code No. 818	
REFERENCE NUMBER ON MAP NO.	10			11		12	
NAME	Standard Oil Co., Toledo Refinery Marine Dock.			Interlake Dock.		Marce Industries Toledo Shipyard Slip.	
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 800 feet above Toledo Terminal Railroad bridge. Jessie Street and Millard Avenue.			Right bank Maumee River, approximately 1,500 feet above Norfolk and Western Railway Bridge. 2401 Front Street		Right bank Maumee River, approximately 1,500 feet above Norfolk and Western Railway Bridge. 2245 Front Street.	
OWNED BY	Norfolk and Western Railway Co.			Toledo-Lucas County Port Authority.		Toledo-Lucas County Port Authority.	
OPERATED BY	Standard Oil Co. of Ohio.			Not operated.		Marce Industries Inc.	
PURPOSE FOR WHICH USED	Shipment and occasional receipt of petroleum products.			Not used.		Mooring vessels for outfitting and repair; mooring company-owned floating equipment.	
TYPE OF CONSTRUCTION	Steel sheet pile retaining walls with solid fill along face, outer 291-foot portion of lower side and outer 302-foot portion of upper side; natural bank along remaining portions of lower and upper sides. Timber fender system fronts retaining walls.			Concrete bulkhead supported on timber piling over timber sheet pile retaining wall with solid fill.		Slip formed by steel sheet pile bulkhead with solid fill.	
DESCRIPTION	Face	Lower side	Upper side	Face	Upper side	Lower side	Upper side
Dimensions (Feet)	257	291+60	322+118	1,727	45	400+27	290+103
Depth Alongside at LWD Do.	21	13	10-20	20-22	-	12-15	12-15
Breasting Distance Do.	257	351	500	1,725	-	445+27	290+103
Total Berthing Space Do.	300	351	500	1,725	-	445+27	290+103
Width of Apron Do.	Open.			Open.		Open.	
Height of Deck at LWD Do.	7.5			10		9	
Load Capacity (Lbs. per Sq. Ft.)	-			-		-	
Lighted or Unlighted	Lighted.			Lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	Two hand-operated davits for launching small craft for cleaning oil spills.			None.		One 20-ton, diesel, mobile hoist with 82-foot telescopic boom. Additional rental equipment is available as required.	
RAILWAY CONNECTIONS	None.			None.		None.	
HIGHWAY CONNECTIONS	Via Millard Avenue, asphalt, 32 feet wide, from Front Street, asphalt, 40 feet wide.			Via driveway from Front Street, asphalt, 40 feet wide.		Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	
WATER SUPPLY (For Vessels)	Through 3/4-inch hose.			Through one 4-inch line.		Through 4-inch line.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/440 volts.			None.		A.C., 110/220/440 volts; D.C., 110/220 volts.	
FIRE PROTECTION (Other Than City)	Foam system, hose cart, hand extinguishers, and one 6-inch suction line for fire department pumper truck.			None.		Hydrants, hand extinguishers, and security patrol.	
REMARKS	Three 12- and two 10-inch pipelines with 8-inch connections at two loading stations at face extend to pier from 21 steel storage tanks at company-owned refinery approximately 1 1/2 miles inland, total capacity 1,021,000 barrels.			At time of survey (1988), future of wharf as a docking facility was not known.		Slip is 230 feet wide at the entrance and approximately 70 feet wide at the inner end. Sides of slip are equipped with lines for supplying compressed air, oxygen, and acetylene gas.	

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 820	72014 Dock Code No. 818	72014 Dock Code No. 812	
REFERENCE NUMBER ON MAP NO.	13	14	15	
NAME	Medusa Cement Co. Toledo Terminal Wharf.	Merce Industries Toledo Shipyard Dock.	Nabisco Toledo Flour Mill Wharf.	
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 0.6 mile above Norfolk and Western Railway Bridge 2301 Front Street.	Right bank Maumee River, approximately 0.8 mile below Craig Memorial (Interstate Highway 280) Bridge. 2245 Front Street.	Right bank Maumee River, approximately 0.7 mile below Craig Memorial (Interstate Highway 280) Bridge. 2221 Front Street.	
OWNED BY	Toledo-Lucas County Port Authority.	Toledo-Lucas County Port Authority.	Nabisco, Inc.	
OPERATED BY	Medusa Cement Co.	Merce Industries Inc.	Not operated.	
PURPOSE FOR WHICH USED	Receipt of bulk cement.	Mooring vessels for outfitting, conversion, and repair.	Not used.	
TYPE OF CONSTRUCTION	Concrete bulkhead supported by timber piles with concrete-surfaced solid fill.	Two sections of concrete bulkhead supported by timber piles, solid fill; separated by entrance to graving dock.	Part steel pile- and part concrete-bulkhead, all with concrete-surfaced solid fill.	
DESCRIPTION	Face	Face	Face	Upper side
Dimensions (Feet)	250	242+118	85	25
Depth Alongside at LWD Do.	21	19	17	-
Breasting Distance Do.	250	460	85	-
Total Berthing Space Do.	568 w/adjacent wharves	900 w/adjacent wharves	85	-
Width of Apron Do.	Open.	Open.	Open.	
Height of Deck at LWD Do.	8	8	8	
Load Capacity (Lbs. per Sq. Ft.)	-	-	-	
Lighted or Unlighted	Lighted.	Lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	Elevated receiving hopper at face is served by a 12-inch air-slide conveyor extending to storage silos in rear, rate 500 tons per hour.	Two electric, traveling, full-portal, gantry cranes, each with 110-foot boom and capacity of 50 tons at 50-foot radius; and use of crane described under Ref. No. 12.	None.	
RAILWAY CONNECTIONS	None.	Trackage serving shipyard in rear connects with Norfolk and Western Railway.	Sixteen surface tracks serve car dumper and carloading spouts at grain elevator in rear; connect with Norfolk and Western Railway.	
HIGHWAY CONNECTIONS	Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	Via plant road, paved, various widths, from Front Street, asphalt, 40 feet wide.	Via plant roads, paved, various widths, from Front Street, asphalt, 40 feet wide.	
WATER SUPPLY (For Vessels)	Through 3-inch line.	Through 4-inch line.	Through one 6-inch line serving hydrant in rear.	
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.	A.C., 110/220/440 volts; D.C. 110/220 volts.	None.	
FIRE PROTECTION (Other Than City)	Hydrants, hand extinguishers, and security patrol.	Hydrants, hand extinguishers, and security patrol.	Automatic detection system, pump, hydrants hand extinguishers, and security patrol.	
REMARKS	Two concrete silos at rear have total capacity for 14,000 tons.	Berthing space includes widths of entrances to graving docks No. 1 between wharf sections, and No.2 between upper section and adjacent wharf (Ref. No. 13) as well as that wharf which is used by reciprocal berthing arrangement. Wharf is equipped with lines for supplying compressed air, oxygen, and acetylene gas.	Merce Industries Inc. occasionally uses wharf for berthing vessels undergoing repairs at adjacent shipyard. Wharf is fenced. Nabisco, Inc. owns and operates a flour mill and grain elevator with storage capacity for 5,000,000 bushels in rear; grain is received by rail and truck and flour is shipped by truck.	

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 777			72014 Dock Code No. 777		72014 Dock Code No. 748
REFERENCE NUMBER ON MAP NO.	16			17		18
NAME	Sun Refining and Marketing Co., Downstream Hocking Valley Pier.			Sun Refining and Marketing Co., Upstream Hocking Valley Pier.		Toledo Edison Co. Acme Station Slip.
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 700 feet below Craig Memorial (Interstate Highway 280) Bridge. 1761 Front Street.			Right bank Maumee River, approximately 100 feet below Craig Memorial (Interstate Highway 280) Bridge. 1641 Front Street.		Right bank Maumee River, lower side of slip, approximately 0.2 mile below Craig Memorial (Interstate Highway 280) Bridge. 1401 Front Street.
OWNED BY	Sun Refining and Marketing Co.			Sun Refining and Marketing Co.		The Toledo Edison Co.
OPERATED BY	Marco Industries Inc.			Sun Refining and Marketing Co.		Seneca Petroleum Co. Inc.
PURPOSE FOR WHICH USED	Mooring vessels for storage, maintenance, and repair.			Receipt of refinery feed stock; shipment of fuel oil and benzene.		Receipt of asphalt by barge.
TYPE OF CONSTRUCTION	Pier formed by concrete retaining walls supported by timber piles.			Concrete bulkhead supported by timber piles, solid fill.		Row of 5 timber breasting dolphins with 30- by 3-foot approach. Berth is constricted to 95-foot width by a parallel row of timber dolphins.
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Dolphins
Dimensions (Feet)	170	850+105	840+100	335	557+168+193	200
Depth Alongside at LWD Do.	8	18-27	13	27-27	18	10-18
Breasting Distance Do.	-	850+105	850+105	-	557+168+193	200
Total Berthing Space Do.	-	850+105	850+105		918	200
Width of Apron Do.	Open.			Open.		Open.
Height of Deck at LWD Do.	12			12		12
Load Capacity (Lbs. per Sq. Ft.)	-			-		-
Lighted or Unlighted	Lighted.			Lighted.		Lighted.
MECHANICAL HANDLING FACILITIES	Four inoperative, hand-operated, mast-and-boom derricks on upper side, each with 18-foot boom for handling hose.			Four hand-operated, mast-and-boom derricks on lower side, each with 20-foot boom for handling hose.		None.
RAILWAY CONNECTIONS	None.			None.		Trackage serving rotary dumper at open coal storage area and electric power plant in rear connects with Consolidated Rail Corp.
HIGHWAY CONNECTIONS	Via private road, cinder and gravel, various widths, from foot of Consaul Street, asphalt, 35 feet wide.			Via private road, cinder and gravel, various widths, from foot of Consaul Street, asphalt, 35 feet wide.		Via plant road, from Front Street, asphalt, 45 feet wide.
WATER SUPPLY (For Vessels)	None.			Through 2 1/2-inch line.		None.
ELECTRIC CURRENT (For Vessels)	A.C., 110/490 volts.			A.C., 110 volts.		None.
FIRE PROTECTION (Other Than City)	Hand extinguishers and one 6-inch suction line for fire department pumper truck.			Hand extinguishers, chemical carts, and one 6-inch suction line for fire department pumper truck.		Plant fire truck, hydrant, hose and security patrol.
REMARKS	Three blanked, 8-inch pipeline connections at 4 separate locations on upper side, connect with pipelines and storage tanks described under Ref. No. 17. One 6-inch ballast pipeline, with one 6-inch connection at each of the 4 locations, connects with ballast pipeline serving Ref. No. 17 and extends to one 5,000-barrel storage tank at rear of lower side of Ref. No. 17. Upper side forms 280-foot-wide slip with lower side of Ref. No. 17.			One 12-, one 10-, one 8-, and one 6-inch pipeline connections at 4 separate locations on lower side connect with pipelines serving Ref. No. 16 at manifold in rear. One 12-, one 8-, and one 6-inch pipelines extend to manifold from 28 steel storage tanks at company-owned refinery, approximately 2 miles inland, total capacity 2,300,000 barrels. In addition, one 12-inch pipeline extends to manifold from 3 storage tanks located 600 feet north of Front and Consaul Streets, total capacity 175,000 barrels. One 6-inch ballast pipeline with one 6-inch connection at each of the 4 locations joins ballast pipeline described under Ref. No. 16.		One 8-inch steam-traced pipeline extends from dolphin along approach to one 47,600-barrel storage tank in rear.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 700		72014 Dock Code No. 697	72014 Dock Code No. 603
REFERENCE NUMBER ON MAP NO.	19		20	21
NAME	City of Toledo, Department of Streets, Bridges, and Harbor Wharf.		City of Toledo East Side Mooring Dock.	Mid-States Terminals Wharf.
LOCATION ON WATERFRONT	Right bank Maumee River, approximately 1,000 feet above Cherry Street Bridge. 26 Main Street		Right bank, Maumee River above and below Anthony Wayne Bridge. International Park	Left bank, Maumee River, approximately 1,800 feet above Consolidated Rail Corp. bridge. 1308 Miami Street.
OWNED BY	City of Toledo.		City of Toledo.	Mid-States Terminals, subsidiary of Countrymark Inc.
OPERATED BY	City of Toledo.		City of Toledo.	Mid-States Terminals, subsidiary of Countrymark Inc.
PURPOSE FOR WHICH USED	Mooring city-owned, excursion and miscellaneous vessels.		Mooring lake freighter "Willis B. Boyer" on exhibition; mooring vessels during closed navigation season; landing for harbor excursion boats.	Shipment of grain.
TYPE OF CONSTRUCTION	Concrete bulkhead supported by timber piles with asphalt-surfaced solid fill; timber bulkhead along lower side.		Concrete bulkhead supported by timber piles, solid fill.	Lower 120+710-foot portion: Steel sheet pile bulkhead with asphalt-surfaced solid fill. Center 800-foot portion: Concrete bulkhead supported on timber piling over timber sheet pile retaining wall. Upper 160-foot portion: Steel sheet pile bulkhead with asphalt-surfaced solid fill. Lower section fronted by rubber cushioned timber and steel fender system.
DESCRIPTION	Face	Lower side	Face	Face
Dimensions (Feet)	820+222	35+170	1,800+682+325	120+710+960
Depth Alongside at LWD Do.	15	8-14	16-21	27
Berthing Distance Do.	820+222	35+50	1,800+682+325	120+710+96
Total Berthing Space Do.	1,042	35+50	2,607	120+710+95
Width of Apron Do.	Open and 60.		Open.	20, 26, & open
Height of Deck at LWD Do.	10		16 and 8.	10
Load Capacity (Lbs. per Sq. Ft.)	-		-	-
Lighted or Unlighted	Lighted.		Partly lighted.	Lighted.
MECHANICAL HANDLING FACILITIES	One 40-ton, electric, stiff-leg derrick with 60-foot boom mounted on bull wheel and having an outboard reach of 40 feet; one 25-ton, gasoline, mobile crane with 60-foot boom; and one gasoline forklift truck.		None.	Ten vessel-loading spouts, average rate 55,000 bushels per hour combined, and three additional independently-operated loading spouts, rate 80,000 bushels per hour combined.
RAILWAY CONNECTIONS	None.		None.	Four surface tracks at rear of elevator, total capacity 70 cars, join with 2 tracks serving 2 car pits and 3 carloading spouts in car shed; connect with CSX Rail Transport.
HIGHWAY CONNECTIONS	Via road, asphalt, 18 feet wide, from Main Street approach to Cherry Street Bridge.		Via road, asphalt, 30 feet wide, extending from Main Street.	Via plant road to wharf, asphalt, 14 to 22 feet wide, from Miami Street.
WATER SUPPLY (For Vessels)	Through 3- and 2-inch lines.		Through 4-inch line with 3-inch connections.	Through 1- and 2-inch lines.
ELECTRIC CURRENT (For Vessels)	A.C., 110/220/440 volts.		A.C., 110/220 volts.	A.C., 110/220/440.
FIRE PROTECTION (Other Than City)	Sprinkler system in building, hydrants, hose, and hand extinguishers.		Hand extinguishers.	Hydrants, hose, and hand extinguishers.
REMARKS	Former 425- by 120-foot transit shed is used by the Department of Streets, Bridges, and Harbor as warehouse and garage; a small addition on lower side is used as office by the City of Toledo, Pollution Control Division. One 45,000-square foot, asphalt- paved, open storage area at upper end of wharf has capacity for approximately 40,000 tons of salt. Small vessels berth 2 abreast at 35-foot section of lower side against lower level timber walkways. Excursion vessel berths against 50- by 15-foot steel float fronting 135-foot section. A small boat marina is located in cove adjacent to lower side of wharf.		Vessels can moor under the high-level Anthony Wayne Bridge.	Grain elevator at rear consists of one unit with 56 concrete silos and 68 interstitial bins and one unit with 30 concrete silos and 30 interstitial bins, total capacity 9,000,000 bushels.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 452		72014 Dock Code No. 450	72014 Dock Code No. 446	
REFERENCE NUMBER ON MAP NO.	22		23	24	
NAME	Cargill, Toledo Elevator Dock.		Kuhlman Corp., Upper Dock.	Kuhlman Corp., Yard No. 1 Dock.	
LOCATION OF WATERFRONT	Left bank, Maumee River, below Interstate Highway 75 Bridge. 125 Edwin Drive.		Right bank Maumee River, approximately 1,500 feet below Interstate Highway 75 Bridge. 444 Kuhlman Drive.	Right bank Maumee River, approximately 0.3 mile above Consolidated Rail Corp. bridge. 444 Kuhlman Drive.	
OWNED BY	Cargill, Inc.		Kuhlman Corp.	Kuhlman Corp.	
OPERATED BY	Cargill, Inc.		Kuhlman Corp.	Kuhlman Corp.	
PURPOSE FOR WHICH USED	Shipment of grain.		Receipt of dry bulk fertilizer and salt by self-unloading vessel; mooring grain vessels awaiting shipping berths; mooring miscellaneous vessels.	Receipt of sand and gravel; mooring floating equipment at rear of face.	
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead with asphalt-surfaced solid fill; one steel sheet pile, cellular breasting dolphin with separate steel shore connection on each side in line with face.		Row of 3 steel sheet pile, concrete-capped, cellular breasting dolphins fronted by rubber-cushioned timber and steel fenders, each with 50-foot steel catwalk approach.	Concrete-capped, solid-filled, steel sheet pile cellular type, offshore wharf with causeway approach to upper end.	
DESCRIPTION	Face	Sides	Breasting dolphins	Face	Rear of face
Dimensions (Feet)	270	60, each	340	265	230
Depth Alongside at LWD Do.	28	-	22	18	6
Breasting Distance Do.	590 w/dolphins	-	340	265	230
Total Berthing Space Do.	730	-	340	265	230
Width of Apron Do.	50		Open.	30	
Height of Deck at LWD Do.	8		10, bank	6	
Load Capacity (Lbs. per Sq. Ft.)	-		-	-	
Lighted or Unlighted	Lighted.		Partly lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	One electric, straight line, conveyor boom having 70-foot outboard reach and equipped with loading spout mounted on full portal gantry which travels full length of wharf, loading rate 30,000 bushels per hour.		Receiving hopper on bank is served by a 48-inch electric belt conveyor extending into storage building in rear, rate 2,000 tons per hour.	One diesel crawler crane with 70-foot boom equipped with 4-cubic yard clamshell bucket, unloads materials from barges into a 15-cubic yard receiving hopper on wharf; a 36-inch, electric, belt-conveyor system extends from hopper via suspension bridge over slip at rear of face to a mobile radial stacker serving open storage area on shore at rear, rate 400 tons per hour. One 5-cubic yard, diesel, front-end loader serves open storage area.	
RAILWAY CONNECTIONS	Two surface tracks, total capacity 100 cars, serve undertrack pit and loading spout in car shed at rear of grain elevator; connect with Norfolk and Western Railway.		One surface track serving undertrack pit and loading spout in rear connects with Norfolk and Western Railway.	One surface track serving plant in rear connects with Norfolk and Western Railway.	
HIGHWAY CONNECTIONS	Via Edwin and Kuhlman Drives, each concrete, 24 feet wide, from South Avenue.		Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.	Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.	
WATER SUPPLY (For Vessels)	Through 4-inch line with 2 1/2-inch connections.		None.	None.	
ELECTRIC CURRENT (For Vessels)	None.		None.	A.C., 110 volts.	
FIRE PROTECTION (Other Than City)	Hydrants, hand extinguishers, and 8-inch suction lines for fire department pumper.		None.	Hand extinguishers.	
REMARKS	Grain elevator at rear consists of 12 concrete silos with 5 interstitial bins and 7 steel storage tanks, total capacity 5,800,000 bushels. Additional 4,400,000 bushels of grain storage is available at Cargill Elevator located at Maumee, Ohio, approximately 8 miles distant.		Timber storage building at rear has storage capacity for 165,000 tons of fertilizer. Concrete-paved open storage area has capacity for 100,000 tons of fertilizer and 50,000 tons of salt	Rear of face forms 60-foot wide slip with stone-revetted bank. Open storage area at rear has capacity for 100,000 tons.	

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 442	72014 Dock Code No. 280	72014 Dock Code No. 235
REFERENCE NUMBER ON MAP NO.	25	26	27
NAME	The Andersons Toledo River Terminal Wharf.	Lafarge Corp. Toledo Terminal Wharf.	Kuhlman Corp., Plant No. 7 Wharf.
LOCATION ON WATERFRONT	Left bank, Maumee River, above Consolidated Rail Corp. bridge. 440 Kuhlman Drive.	Left bank Maumee River, approximately 700 feet below Cherry Street Bridge. 840 Water Street.	Left bank, Maumee River, approximately 2,000 feet above Craig Memorial (Interstate Highway 280) Bridge. 1200 Water Street extended.
OWNED BY	The Andersons.	Lafarge Corp., Great Lakes Region.	Kuhlman Corp.
OPERATED BY	The Andersons.	Lafarge Corp., Great Lakes Region.	Kuhlman Corp.
PURPOSE FOR WHICH USED	Shipment of grain; receipt of dry bulk and liquid fertilizer.	Receipt of bulk cement.	Receipt of salt, sand, stone, and miscellaneous bulk materials.
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead with part asphalt-surfaced solid fill; one steel sheet pile cellular mooring dolphin on upper side connected by walkway; wharf fronted by a rubber-cushioned, timber and steel fender system.	Part concrete and part steel sheet pile bulkhead with solid fill; fronted by timber fender system.	922-foot masonry bulkhead and 158-foot concrete bulkhead, solid fill, each supported by timber cribbing; bulkheads are separated by 200 feet of stone revetted natural bank.
DESCRIPTION	Face	Face	Face
Dimensions (Feet)	1,030	924	922 and 158
Depth Alongside at LWD Do.	27	18-22	12
Berthing Distance Do.	1,030	1,061 (See Remarks.)	1,280
Total Berthing Space Do.	1,100	1,061	1,280
Width of Apron Do.	Open and 15.	60 & open.	Open.
Height of Deck at LWD Do.	9 and 15.	8	10
Load Capacity (Lbs. per Sq. Ft.)	-	-	-
Lighted or Unlighted	Lighted.	Lighted.	Unlighted.
MECHANICAL HANDLING FACILITIES	Six vessel-loading spouts extend from storage silos at rear, combined loading rate 80,000 bushels per hour. Self-unloading vessels discharge bulk fertilizer directly into storage domes or rail loading hopper at rear. One 3 cubic yard diesel front-end loader is used to load trucks or a 24-inch electric belt conveyor extending to rail loading hopper.	None. (See Remarks.)	Open storage area at rear is served by self unloading vessels. Front-end loaders for distributing material and loading trucks are available as required.
RAILWAY CONNECTIONS	One surface track serves car pit, carloading spout, and fertilizer loading facility, joins with 3 storage tracks; connects with Norfolk and Western Railway.	None.	Consolidated Rail Corp.: One marginal surface track, approximately 100 feet in rear of face.
HIGHWAY CONNECTIONS	Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.	Via Water Street, asphalt, 42 feet wide, from Walnut Street, asphalt, 30 feet wide, or LaGrange Street, brick, 60 feet wide, from Summit Street.	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street, asphalt, 42 feet wide.
WATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connection.	Through 1 1/4-inch line.	None.
ELECTRIC CURRENT (For Vessels)	None.	A.C., 110 volts.	None.
FIRE PROTECTION (Other Than City)	Fire pump, hose, and hand extinguishers.	Hydrant and hand extinguishers.	None.
REMARKS	Grain elevator at rear of lower section of wharf consists of 16 concrete silos with 10 interstitial and 13 peripheral bins and 5 steel tanks and has a total storage capacity for 7,000,000 bushels of grain. Additional 17,000,000 bushels of grain storage is available at The Andersons Elevator at Maumee, Ohio, approximately 8 miles distant. Three concrete storage domes at rear have total capacity for 60,000 tons of fertilizer. One 8-inch pipeline extends from wharf to 2 steel fertilizer storage tanks, total capacity 5,480,000 gallons.	The contiguous 137-foot concrete bulkhead at lower side is owned by The Toledo Edison Co. and fronts their Locust Street Substation, providing for additional berthing space. Two 10-inch unloading pipelines at face of wharf extend to 8 concrete, cement storage silos with 3 interstitial bins, total capacity 12,400 tons, unloading rate for self-unloading vessels is 550 to 700 tons per hour. Plant is equipped to load trucks with bulk and bagged cement from adjacent bagging plant.	Part asphalt-surfaced open storage area at rear has capacity for approximately 150,000 tons.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 222	72014 Dock Code No. 220	72014 Dock Code No. 159		
REFERENCE NUMBER ON MAP NO.	28	29	30		
NAME	Toledo Harbor Warehousing Corp. Wharf.	Toledo World Terminal, Consolidated Dock.	Wohlleb-Socia Slip.		
LOCATION ON WATERFRONT	Left bank Maumee River, above Craig Memorial (Interstate Highway 280) Bridge. 1500 Water Street extended.	Left bank Maumee River, below Craig Memorial (Interstate Highway 280) Bridge. 1800 Water Street extended.	Left bank Maumee River, foot of Columbus Street extended. Columbus Street at Maumee River.		
OWNED BY	Consolidated Rail Corp.	Consolidated Dock division of Toledo World Terminal, Inc.	Wohlleb-Socia Co.		
OPERATED BY	Toledo Harbor Warehousing Corp.	Consolidated Dock division of Toledo World Terminal, Inc.	Wohlleb-Socia Co.		
PURPOSE FOR WHICH USED	Receipt of newsprint.	Receipt of miscellaneous bulk materials including stone, salt, and fertilizer by self unloading vessel.	Mooring company-owned floating equipment. Handling contractor's supplies and equipment.		
TYPE OF CONSTRUCTION	Timber cribbing and timber piling, capped with stone block, solid fill.	Three timber breasting dolphins fronting natural bank.	Dredged slip: 330-foot steel sheet pile bulkhead with solid fill along inner portion and grounded wooden barge along outer portion of upper side.		
DESCRIPTION	Face	Face	Head of slip	Upper side	Lower side
Dimensions (Feet)	1,237	675	60	330+37+178	460
Depth Alongside at LWD Do.	20	26	3	3	3
Breasting Distance Do.	750	675	-	330+175	460
Total Berthing Space Do.	750	900 w/bank.	-	505	460
Width of Apron Do.	20-50 and open.	Open.	Open.		
Height of Deck at LWD Do.	10	12	6		
Load Capacity (Lbs. per Sq. Ft.)	-	-	-		
Lighted or Unlighted	Lighted.	Partly lighted.	Unlighted.		
MECHANICAL HANDLING FACILITIES	Twelve 2 1/4-ton, gasoline lift trucks, eleven equipped with roll clamps and one with forks, unload vessel through side ports via steel ramps extending from transit shed's 2 shipside doors.	Two 5-cubic yard diesel, front-end loaders serve a 76-inch electric belt conveyor extending to storage building at rear. Two portable conveyors are available for loading trucks.	Contractor's equipment available as required.		
RAILWAY CONNECTIONS	Consolidated Rail Corp.: One marginal surface track along rear of face serves platform along front of Warehouse No. 5 and one platform-level track serves Warehouse No. 3 at rear of transit shed.	Two surface tracks at rear connect with Consolidated Rail Corp.	None.		
HIGHWAY CONNECTIONS	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street, asphalt.	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street.	Via driveway, gravel, various widths, from foot of Columbus Street, asphalt, 24 feet wide.		
WATER SUPPLY (For Vessels)	Through one 1-inch line.	Through 2-inch line.	None.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	None.	None.		
FIRE PROTECTION (Other Than City)	Automatic detection system, hose, and hand extinguishers.	Hydrants and sprinkler system in storage buildings.	Hand extinguishers.		
REMARKS	Transit shed is also used as storage warehouse. Two steel frame, metal-covered buildings, one at rear of lower portion of wharf and one in rear of transit shed, are used as storage warehouses (S.W. Ref. No. 2).	Two steel frame, metal-covered, storage buildings at rear have total storage capacity for approximately 75,000 tons. Open storage area has normal capacity for approximately 500,000 tons.	Slip is approximately 700 feet long with widths of 60 and 97 feet at inner portion and approximately 200 feet at outer portion. Marine contractor's 220- by 50-foot shop and maintenance building and storage yard is located in rear.		

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 142			72014 Dock Code No. 141		72014 Dock Code No. 070		
REFERENCE NUMBER ON MAP NO.	31			32		33		
NAME	H. Hansen Industries Slip.			Petroleum Fuel and Terminal Co. Toledo Wharf.		City of Toledo Mooring Basin.		
LOCATION ON WATERFRONT	Left bank Maumee River, approximately 500 feet above Norfolk and Western Railway Bridge. 2824 Summit Street.			Left bank Maumee River, above Norfolk and Western Railway Bridge. 2844 Summit Street.		Left bank Maumee River, approximately 0.5 mile below Toledo Terminal Railroad Bridge. Bayview Park		
OWNED BY	Riverside Marine Industries Inc. d.b.a. H. Hansen Industries.			Petroleum Fuel and Terminal Co. subsidiary of Apex Oil Co.		City of Toledo.		
OPERATED BY	Riverside Marine Industries Inc. d.b.a. H. Hansen Industries.			Petroleum Fuel and Terminal Co. subsidiary of Apex Oil Co.		City of Toledo.		
PURPOSE FOR WHICH USED	Mooring vessels for repair; mooring company-owned floating equipment and harbor tugs.			Receipt and shipment of petroleum products.		Mooring vessels during closed navigation season for storage, maintenance, and repair.		
TYPE OF CONSTRUCTION	Slip formed by steel sheet pile retaining walls with solid fill; one 24-foot, steel sheet pile cellular dolphin in line with outer end of 250-foot section of upper side.			Steel sheet pile bulkhead with solid fill; fronted by rubber tire fenders.		Basin formed by steel sheet pile retaining walls with solid fill.		
DESCRIPTION	Head of slip	Upper side	Lower side	Face	Upper side	Inner side	Upper side	Lower side
Dimensions (Feet)	107+28	250	304+44	331	403+124	1,270	500	300
Depth Alongside at LWD Do.	9	8-13	12	19	18	8-9	8-9	8-9
Berthing Distance Do.	107	500w/dolphs	304	-	403+124	1,270	500	300
Total Berthing Space Do.	107	500	304	-	557	1,270	500	300
Width of Apron Do.	Open.			Open.		Open.		
Height of Deck at LWD Do.	5			19		6		
Load Capacity (Lbs. per Sq. Ft.)	-			-		-		
Lighted or Unlighted	Lighted.			Lighted.		Unlighted.		
MECHANICAL HANDLING FACILITIES	One 25-ton, diesel, mobile hoist with 73-foot boom and one 25-ton gasoline mobile crane with 70-foot boom. One 50-ton, electric, traveling boat hoist serves 75- by 25-foot basin at inner end of upper side.			None.		None.		
RAILWAY CONNECTIONS	None.			Two surface tracks serving 5-car-capacity tank car loading rack connect with Norfolk and Western Railway.		None.		
HIGHWAY CONNECTIONS	Via driveway, gravel, 10 feet wide, from Summit Street, asphalt, 50 feet wide.			Via terminal road, gravel, 10 feet wide, from Summit Street, asphalt, 50 feet wide.		Via Armory Drive, asphalt, 24 to 30 feet wide, from Summit Street, asphalt, 41 feet wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.			Through 2 1/2-inch line.		Available.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220/440 volts.			A.C., 110 volts.		A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Water line, hose, and hand extinguishers.			Central foam generator system, hydrants, hose and chemical carts, and hand extinguishers.		None.		
REMARKS	Electric boat hoist can lift small vessels up to 75 feet in length and 24 feet in width. Marine repair plant located in rear at head of slip. One 1 1/2-inch compressed air line serves slip. Gaelic Tug Boat Co. moors harbor tugs at outer end of lower side of slip.			The 124-foot upper side of bulkhead is contiguous and in line with lower 44-foot side section of Ref. No. 31. Two 8-inch pipelines extend from wharf to 8 steel storage tanks in rear, total capacity 216,000 barrels. Storage tanks also receive petroleum products by Sun Pipeline Co. cross-country pipeline.		-		

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 066		72014 Dock Code No. 065	Dock Code No.
REFERENCE NUMBER ON MAP NO.	34		35	
NAME	Naval Armory Wharf.		U.S. Coast Guard, Toledo Station Wharf.	
LOCATION ON WATERFRONT	Left bank Maumee River, on upper side of entrance to Bay View Park Yacht Basin. 3900 Summit Street, Bayview Park		Left bank Maumee River, on lower side of entrance to Bay View Park Yacht Basin. 3900 Summit Street, Bayview Park.	
OWNED BY	State of Ohio.		United States Government.	
OPERATED BY	Not operated.		U.S. Coast Guard.	
PURPOSE FOR WHICH USED	Not used.		Mooring U.S. Coast Guard and other government-owned vessels handling navigation data.	
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead, with part concrete surfaced solid fill.		Concrete-capped steel sheet pile bulkhead with concrete- and asphalt-surfaced solid fill; fronted by vertical rubber strip fenders.	
DESCRIPTION	Face	Lower side	Face	
Dimensions (Feet)	115	70+272+36	430	
Depth Alongside at LWD Do.	12	12	16	
Breasting Distance Do.	115	70+272	430	
Total Berthing Space Do.	115	70+272	430	
Width of Apron Do.	Open.		Open.	
Height of Deck at LWD Do.	6		7	
Load Capacity (Lbs. per Sq. Ft.)	-		-	
Lighted or Unlighted	Partly lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	None.		None.	
RAILWAY CONNECTIONS	None.		None.	
HIGHWAY CONNECTIONS	Via Armory Drive, asphalt, 24 to 30 feet wide, from Summit Street, asphalt, 41 feet wide.		Via Coast Guard Drive, asphalt, 23 to 20 feet wide, from Armory Drive and Summit Street.	
WATER SUPPLY (For Vessels)	Through hose line from building at rear.		Through one 2-inch line in building.	
ELECTRIC CURRENT (For Vessels)	None.		A.C., 110 volts, single- and 220/240/440 volts, 3-phase.	
FIRE PROTECTION (Other Than City)	Hydrants, hose, and hand extinguishers.		Fire pump, hand extinguishers, hose, and 24-hour security patrol.	
REMARKS	Naval armory located along rear of lower side. Bay View Park Yacht Basin at inner end of lower side includes recreational craft moorings of Toledo Yacht Club and Bay View Yacht Club.		Wharf is equipped with a 4-inch sewage line and a 1 1/2-inch fueling pipeline from one 1,000-gallon diesel fuel storage tank. Toledo Projects Office of the District Engineer, Buffalo District, Corps of Engineers, is located in building on opposite side of Coast Guard Drive. U.S. Coast Guard Reserve, City of Toledo Police Department, and U.S. Army Corps of Engineers moor at 3 parallel 60- by 4-foot timber pile, timber- decked piers in yacht basin adjacent to inner end of wharf.	

OIL HANDLING AND BUNKERING

Five of the waterfront facilities described in this report are equipped to receive and/or ship petroleum products, or provide bunkering service; four are along the right bank and one is on the left bank of the Maumee River. Vessels at berth are regularly supplied with bunker fuel by tank trucks.

The tabulation below gives information on the facilities equipped to handle petroleum products; details are given in the table of Piers, Wharves, and Docks, beginning on page 13, under the reference numbers indicated. Tank storage at recreational craft service stations is not included.

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET-LWD)	STORAGE TANKS NO.	STORAGE TANKS CAPACITY (BARRELS)
9	Great American Lakes Petroleum Products Co.	300	18	15	350,000
32	Petroleum Fuel and Terminal Co.	557	18	8	216,000
18	Seneca Petroleum Co., Inc.	200	10	1	47,600 (A)
10	The Standard Oil Co. of Ohio	300	21	21	1,021,000
17	Sun Refining and Marketing Co.	918	27	28	2,300,000
TOTALS				73	3,934,600

(A) Asphalt.

DRY BULK HANDLING

Twelve facilities at the port handle dry bulk commodities of one type or another. The Lakefront Pellet Terminal (P.W.D. Ref. No. 2) operated by The Toledo Ore Railroad Co. and three facilities operated by CSX Transportation - Toledo Docks, serve rail traffic bound mainly for inland steel mills.

Toledo World Terminal, Inc. operates two terminals for handling a large variety of bulk commodities (P.W.D. Nos. 8 and 29), and maintains heavy lift cranes at the Toledo-Lucas County Port Authority Wharf (P.W.D. Ref. No. 8).

Kuhlman Corp. operates three bulk handling terminals (P.W.D. Ref. Nos. 23, 24, and 27) served mainly by self-unloading vessels. Each of the facilities maintains substantial

open storage area. The remaining facilities handle materials mostly in connection with their own internal operations.

A summary of the dry bulk handling is given on page 29; further details are given in the table of Piers, Wharves, and Docks beginning on page 13 under the reference numbers indicated.

LIQUID BULK HANDLING

Three terminals at Toledo handle liquid bulk commodities other than petroleum. The handling capabilities of these terminals are tabulated below:

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	COMMODITIES	STORAGE TANKS NO.	STORAGE TANKS CAPACITY (GALLONS)
25	The Andersons	1,100	Fertilizer.	2	5,480,000
8	Industrial Molasses Div. of Westway Trading Corp.	4,196	Molasses. Fertilizer.	14 2	4,600,000 4,250,000
17	Sun Refining and Marketing Co.	557	Benzene.	1-5	Varies.

GRAIN ELEVATORS

Eight grain elevators with a total capacity of 57,000,000 bushels are located in the Toledo area; four of these are located along the waterfront, three of which have facilities for the shipment of grain by water.

One of the waterfront elevators is owned and privately operated by Nabisco, Inc., and is located on the right bank of the Maumee River, below Interstate Highway 280 Bridge. This 6,000,000-bushel capacity elevator receives grain and ships milled flour by rail and truck. At time of this survey, their wharf (P.W.D. Ref. No. 15) was not used for handling cargo.

Cargill, Inc., owns and operates a 5,800,000-bushel elevator on the left bank of the Maumee River below the Interstate Highway 75 Bridge (P.W.D. Ref. No. 22). The elevator receives grain by rail and truck, and ships by vessel. Additional storage for 6,200,000 bushels of grain is available at the company's Maumee elevator, located about 8 miles distant.

Mid-States Terminals, Inc., subsidiary of Countrymark, Inc. (P.W.D. Ref. No. 21) operates a 9,000,000-bushel capacity elevator on the right bank of the Maumee River

above the Consolidated Rail Corp. bridge. This elevator is equipped to receive grain by rail and truck and to ship by vessel.

The Andersons River Terminal Elevator and Wharf (P.W.D. Ref. No. 27) are on the left bank of the Maumee River, above the Consolidated Rail Corp. Bridge. Bulk grain is received at the 7,000,000-busnel-capacity elevator by rail hopper cars and truck. Additional storage for 17,000,000 bushels of grain is available at the company's Maumee, Ohio, elevator located about 8 miles distant.

The following tabulation lists the grain storage facilities in the Toledo area. Detaiis of the four waterside grain elevators are given in the table beginning on page 30.

LIST OF GRAIN STORAGE FACILITIES

NAME OF OPERATOR	LOCATION	STORAGE CAPACITY (BUSHELS)
*The Andersons	Toledo, OH	7,000,000
The Andersons	Maumee, OH	17,000,000
*Cargill, Inc.	Toledo, OH	5,800,000
Cargill, Inc.	Maumee, OH	6,200,000
Michigan Elevator Exchange	Ottawa Lake, MI	4,000,000
*Mid-States Terminals	Toledo, OH	9,000,000
Nabisco, Inc.	Toledo, OH	6,000,000
The Pillsbury Co.	Toledo, OH	2,000,000
	TOTAL	57,000,000

*Elevators located along Maumee River equipped with waterfront facilities for shipment of grain by water.

WAREHOUSES

Within the Toledo metropolitan area, 9 companies operate a total of 5,587,600 square feet of dry storage space and 2,025,000 cubic feet of cooler and freezer space; all but one of the warehouses have rail connections, and all are easily accessible to arterial highways. Diversified handling equipment is maintained by the operators, and special services are provided, including packing and crating, forwarding, pool car distribution, carloading, weighing, stamping, and marking. The summary on the following page lists the operators and gives the storage capacities of the dry and cold storage facilities, which are more fully described under individual reference numbers in the table of Storage Warehouses beginning on page 32. The reference numbers identify warehouse locations on the accompanying

Port Facilities Map. The operators listed represent largely the respondents to a mailed questionnaire as time restrictions precluded complete field gathering of information.

In addition to the warehouses listed in the summary, 122,500 square feet of dry storage space are available to the public at the two transit sheds (Sheds A and B) located on the Toledo-Lucas County Port Authority's general cargo Facility No. 1 Wharf (P.W.D. Ref.No. 8); and 25,000 square feet of dry storage space are available in the transit shed located on the Toledo Harbor Warehousing Corp. Wharf (P.W.D. Ref. No. 28).

DRY AND COLD STORAGE WAREHOUSES

S.W. REF. NO.	OPERATOR	STORAGE AREA	
		DRY (SQ.FT.)	COLD (CU.FT.)
12	Ampoint Distribution Services, Inc.....	2,000,000	-
3	Glass City Distribution and Storage.....	60,000	-
7	Great Lakes Cold Storage, Inc.....	124,000	140,000(C) 1,685,000(F) 200,000(X)
1	International Warehouse Services.....	130,000 110,000(Z)	-
4	King Warehouses.....	175,000	-
6	Product Forwarding Corp.....	250,000	-
2	Toledo Harbor Warehousing Corp.....	75,600	-
5	Willis Day Storage Co.....	90,000	-
8	Willis Day Storage Co.....	133,000	-
9	Willis Day Storage Co.....	20,000	-
11	Willis Day Storage Co.....	2,000,000	-
10	South Byrne Industrial Park Corp.....	420,000	-
	TOTAL.....	5,587,600	2,025,000

(C) Cooler. (X) Convertible.
(F) Freezer. (Z) Foreign Trade Zone.

OPEN STORAGE

In addition to the long- and short-term, covered facilities for waterborne cargo, the Toledo-Lucas County Port Authority has open storage areas available to the public for storing commodities not requiring protection from the weather. These areas, totaling approximately 85 acres, are on and at rear of the Port Authority's general cargo Facility No. 1 Wharf (P.W.D. Ref. No. 8). In addition, South Byrne Industrial Park Corp. has 5 acres of open storage area located adjacent to their storage warehouses (S.W. Ref. No. 15) at South Avenue and South Byrne Road. Other operators with waterfront facilities at the Port of Toledo have open storage areas to meet their own operational requirements; these areas usually are not available for public use.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 442	72014 Dock Code No. 258	72014 Dock Code No. 235
REFERENCE NUMBER ON MAP NO.	25	26	27
NAME	The Andersons Toledo River Terminal Wharf.	Lafarge Corp. Toledo Terminal Wharf.	Kuhlman Corp., Plant No. 7 Wharf.
LOCATION ON WATERFRONT	Left bank, Maumee River, above Consolidated Rail Corp. bridge. 440 Kuhlman Drive.	Left bank Maumee River, approximately 700 feet below Cherry Street Bridge. 840 Water Street.	Left bank, Maumee River, approximately 2,000 feet above Craig Memorial (Interstate Highway 280) Bridge. 1200 Water Street extended.
OWNED BY	The Andersons.	Lafarge Corp., Great Lakes Region.	Kuhlman Corp.
OPERATED BY	The Andersons.	Lafarge Corp., Great Lakes Region.	Kuhlman Corp.
PURPOSE FOR WHICH USED	Shipment of grain; receipt of dry bulk and liquid fertilizer.	Receipt of bulk cement.	Receipt of salt, sand, stone, and miscellaneous bulk materials.
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead with part asphalt-surfaced solid fill; one steel sheet pile cellular mooring dolphin on upper side connected by walkway; wharf fronted by a rubber-cushioned, timber and steel fender system.	Part concrete and part steel sheet pile bulkhead with solid fill; fronted by timber fender system.	922-foot masonry bulkhead and 158-foot concrete bulkhead, solid fill, each supported by timber cribbing; bulkheads are separated by 200 feet of stone revetted natural bank.
DESCRIPTION	Face	Face	Face
Dimensions (Feet)	1,030	924	922 and 158
Depth Alongside at LWD Do.	27	18-22	12
Breasting Distance Do.	1,030	1,061 (See Remarks.)	1,280
Total Berthing Space Do.	1,100	1,061	1,280
Width of Apron Do.	Open and 15.	60 & open.	Open.
Height of Deck at LWD Do.	9 and 15.	8	10
Load Capacity (Lbs. per Sq. Ft.)	-	-	-
Lighted or Unlighted	Lighted.	Lighted.	Unlighted.
MECHANICAL HANDLING FACILITIES	Six vessel-loading spouts extend from storage silos at rear, combined load-ing rate 50,000 bushels per hour. Self-unloading vessels discharge bulk fertilizer directly into storage domes or rail loading hopper at rear. One 3 cubic yard diesel front-end loader is used to load trucks or a 24-inch electric belt conveyor extending to rail loading hopper.	None. (See Remarks.)	Open storage area at rear is served by self unloading vessels. Front-end loaders for distributing material and loading trucks are available as required.
RAILWAY CONNECTIONS	One surface track serves car pit, carloading spout, and fertilizer loading facility, joins with 3 storage tracks; connects with Norfolk and Western Railway.	None.	Consolidated Rail Corp.: One marginal surface track, approximately 100 feet in rear of face.
HIGHWAY CONNECTIONS	Via Kuhlman Drive, concrete, 24 feet wide, from South Avenue, concrete, 31 feet wide.	Via Water Street, asphalt, 42 feet wide, from Walnut Street, asphalt, 30 feet wide, or LaGrange Street, brick, 60 feet wide, from Summit Street.	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street, asphalt, 42 feet wide.
WATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connection.	Through 1 1/4-inch line.	None.
ELECTRIC CURRENT (For Vessels)	None.	A.C., 110 volts.	None.
FIRE PROTECTION (Other Than City)	Fire pump, hose, and hand extinguishers.	Hydrant and hand extinguishers.	None.
REMARKS	Grain elevator at rear of lower section of wharf consists of 16 concrete silos with 10 interstitial and 13 peripheral bins and 5 steel tanks and has a total storage capacity for 7,000,000 bushels of grain. Additional 17,000,000 bushels of grain storage is available at The Andersons Elevator at Maumee, Ohio, approximately 8 miles distant. Three concrete storage domes at rear have total capacity for 60,000 tons of fertilizer. One 8-inch pipeline extends from wharf to 2 steel fertilizer storage tanks, total capacity 5,480,000 gallons.	The contiguous 137-foot concrete bulkhead at lower side is owned by The Toledo Edison Co. and fronts their Locust Street Substation, providing for additional berthing space. Two 10-inch unloading pipelines at face of wharf extend to 8 concrete, cement storage silos with 3 interstitial bins, total capacity 12,400 tons, unloading rate for self-unloading vessels is 550 to 700 tons per hour. Plant is equipped to load trucks with bulk and bagged cement from adjacent bagging plant.	Part asphalt-surfaced open storage area at rear has capacity for approximately 150,000 tons.

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 222	72014 Dock Code No. 220	72014 Dock Code No. 159		
REFERENCE NUMBER ON MAP NO.	28	29	30		
NAME	Toledo Harbor Warehousing Corp. Wharf.	Toledo World Terminal, Consolidated Dock.	Wohlleb-Socie Slip.		
LOCATION ON WATERFRONT	Left bank Maumee River, above Craig Memorial (Interstate Highway 280) Bridge. 1000 Water Street extended.	Left bank Maumee River, below Craig Memorial (Interstate Highway 280) Bridge. 1800 Water Street extended.	Left bank Maumee River, foot of Columbus Street extended. Columbus Street at Maumee River.		
OWNED BY	Consolidated Rail Corp.	Consolidated Dock division of Toledo World Terminal, Inc.	Wohlleb-Socie Co.		
OPERATED BY	Toledo Harbor Warehousing Corp.	Consolidated Dock division of Toledo World Terminal, Inc.	Wohlleb-Socie Co.		
PURPOSE FOR WHICH USED	Receipt of newsprint.	Receipt of miscellaneous bulk materials including stone, salt, and fertilizer by self unloading vessel.	Mooring company-owned floating equipment. Handling contractor's supplies and equipment.		
TYPE OF CONSTRUCTION	Timber cribbing and timber piling, capped with stone block, solid fill.	Three timber breasting dolphins fronting natural bank.	Dredged slip: 330-foot steel sheet pile bulkhead with solid fill along inner portion and grounded wooden barge along outer portion of upper side.		
DESCRIPTION	Face	Face	Head of slip	Upper side	Lower side
Dimensions (Feet)	1,237	675	60	330+37+175	460
Depth Alongside at LWD Do.	20	26	3	3	3
Breasting Distance Do.	750	675	-	330+175	460
Total Berthing Space Do.	750	900 w/bank.	-	505	460
Width of Apron Do.	20-50 and open.	Open.	Open.		
Height of Deck at LWD Do.	10	12	6		
Load Capacity (Lbs. per Sq. Ft.)	-	-	-		
Lighted or Unlighted	Lighted.	Partly lighted.	Unlighted.		
MECHANICAL HANDLING FACILITIES	Twelve 2 1/4-ton, gasoline lift trucks, eleven equipped with roll clamps and one with forks, unload vessel through side ports via steel ramps extending from transit shed's 2 shipside doors.	Two 8-cubic yard diesel, front-end loaders serve a 36-inch electric belt conveyor extending to storage building at rear. Two portable conveyors are available for loading trucks.	Contractor's equipment available as required.		
RAILWAY CONNECTIONS	Consolidated Rail Corp.: One marginal surface track along rear of face serves platform along front of Warehouse No. 5 and one platform-level track serves Warehouse No. 3 at rear of transit shed.	Two surface tracks at rear connect with Consolidated Rail Corp.	None.		
HIGHWAY CONNECTIONS	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street, asphalt.	Via road, concrete, 20 feet wide, and macadam, various widths, from Olive Street, concrete, 30 feet wide, and Water Street.	Via driveway, gravel, various widths, from foot of Columbus Street, asphalt, 24 feet wide.		
WATER SUPPLY (For Vessels)	Through one 1-inch line.	Through 2-inch line.	None.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	None.	None.		
FIRE PROTECTION (Other Than City)	Automatic detection system, hose, and hand extinguishers.	Hydrants and sprinkler system in storage buildings.	Hand extinguishers.		
REMARKS	Transit shed is also used as storage warehouse. Two steel frame, metal-covered buildings, one at rear of lower portion of wharf and one in rear of transit shed, are used as storage warehouses (S.W. Ref. No. 2).	Two steel frame, metal-covered, storage buildings at rear have total storage capacity for approximately 75,000 tons. Open storage area has normal capacity for approximately 500,000 tons.	Slip is approximately 700 feet long with widths of 60 and 97 feet at inner portion and approximately 200 feet at outer portion. Marine contractor's 220- by 50-foot shop and maintenance building and storage yard is located in rear.		

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 142			72014 Dock Code No. 141		72014 Dock Code No. 070		
REFERENCE NUMBER ON MAP NO.	31			32		33		
NAME	H. Hansen Industries Slip.			Petroleum Fuel and Terminal Co. Toledo Wharf.		City of Toledo Mooring Basin.		
LOCATION ON WATERFRONT	Left bank Maumee River, approximately 500 feet above Norfolk and Western Railway Bridge. 2824 Summit Street.			Left bank Maumee River, above Norfolk and Western Railway Bridge. 2844 Summit Street.		Left bank Maumee River, approximately 0.5 mile below Toledo Terminal Railroad Bridge. Bayview Park		
OWNED BY	Riverside Marine Industries Inc. d.b.a. H. Hansen Industries.			Petroleum Fuel and Terminal Co. subsidiary of Apex Oil Co.		City of Toledo.		
OPERATED BY	Riverside Marine Industries Inc. d.b.a. H. Hansen Industries.			Petroleum Fuel and Terminal Co. subsidiary of Apex Oil Co.		City of Toledo.		
PURPOSE FOR WHICH USED	Mooring vessels for repair; mooring company-owned floating equipment and harbor tugs.			Receipt and shipment of petroleum products.		Mooring vessels during closed navigation season for storage, maintenance, and repair.		
TYPE OF CONSTRUCTION	Slip formed by steel sheet pile retaining walls with solid fill; one 24-foot, steel sheet pile cellular dolphin in line with outer end of 250-foot section of upper side.			Steel sheet pile bulkhead with solid fill; fronted by rubber tire fenders.		Basin formed by steel sheet pile retaining walls with solid fill.		
DESCRIPTION	Head of slip	Upper side	Lower side	Face	Upper side	Inner side	Upper side	Lower side
Dimensions (Feet)	107+25	250	304+44	331	403+124	1,270	500	300
Depth Alongside at LWD Do.	8	8-13	12	18	18	8-9	8-9	8-9
Breasting Distance Do.	107	500w/dolphs	304	-	403+124	1,270	500	300
Total Berthing Space Do.	107	500	304	-	587	1,270	500	300
Width of Apron Do.	Open.			Open.		Open.		
Height of Deck at LWD Do.	5			10		6		
Load Capacity (Lbs. per Sq. Ft.)	-			-		-		
Lighted or Unlighted	Lighted.			Lighted.		Unlighted.		
MECHANICAL HANDLING FACILITIES	One 25-ton, diesel, mobile hoist with 73-foot boom and one 25-ton gasoline mobile crane with 70-foot boom. One 50-ton, electric, traveling boat hoist serves 75- by 25-foot basin at inner end of upper side.			None.		None.		
RAILWAY CONNECTIONS	None.			Two surface tracks serving 5-car-capacity tank car loading rack connect with Norfolk and Western Railway.		None.		
HIGHWAY CONNECTIONS	Via driveway, gravel, 10 feet wide, from Summit Street, asphalt, 50 feet wide.			Via terminal road, gravel, 10 feet wide, from Summit Street, asphalt, 50 feet wide.		Via Armory Drive, asphalt, 24 to 30 feet wide, from Summit Street, asphalt, 41 feet wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.			Through 2 1/2-inch line.		Available.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220/440 volts.			A.C., 110 volts.		A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Water line, hose, and hand extinguishers.			Central foam generator system, hydrants, hose and chemical carts, and hand extinguishers.		None.		
REMARKS	Electric boat hoist can lift small vessels up to 75 feet in length and 24 feet in width. Marine repair plant located in rear at head of slip. One 1 1/2-inch compressed air line serves slip. Gaelic Tug Boat Co. moors harbor tugs at outer end of lower side of slip.			The 124-foot upper side of bulkhead is contiguous and in line with lower 44-foot side section of Ref. No. 31. Two 8-inch pipelines extend from wharf to 8 steel storage tanks in rear, total capacity 216,000 barrels. Storage tanks also receive petroleum products by Sun Pipeline Co. cross-country pipeline.		-		

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	72014 Dock Code No. 066		72014 Dock Code No. 065	Dock Code No.
REFERENCE NUMBER ON MAP NO.	34		35	
NAME	Naval Armory Wharf.		U.S. Coast Guard, Toledo Station Wharf.	
LOCATION ON WATERFRONT	Left bank Maumee River, on upper side of entrance to Bay View Park Yacht Basin. 3900 Summit Street, Bayview Park		Left bank Maumee River, on lower side of entrance to Bay View Park Yacht Basin. 3900 Summit Street, Bayview Park.	
OWNED BY	State of Ohio.		United States Government.	
OPERATED BY	Not operated.		U.S. Coast Guard.	
PURPOSE FOR WHICH USED	Not used.		Mooring U.S. Coast Guard and other government-owned vessels handling navigation data.	
TYPE OF CONSTRUCTION	Steel sheet pile bulkhead, with part concrete surfaced solid fill.		Concrete-capped steel sheet pile bulkhead with concrete- and asphalt-surfaced solid fill; fronted by vertical rubber strip fenders.	
DESCRIPTION	Face	Lower side	Face	
Dimensions (Feet)	115	70+272+36	430	
Depth Alongside at LWD Do.	12	12	16	
Breasting Distance Do.	115	70+272	430	
Total Berthing Space Do.	115	70+272	430	
Width of Apron Do.	Open.		Open.	
Height of Deck at LWD Do.	6		7	
Load Capacity (Lbs. per Sq. Ft.)	-		-	
Lighted or Unlighted	Partly lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	None.		None.	
RAILWAY CONNECTIONS	None.		None.	
HIGHWAY CONNECTIONS	Via Armory Drive, asphalt, 24 to 30 feet wide, from Summit Street, asphalt, 41 feet wide.		Via Coast Guard Drive, asphalt, 23 to 20 feet wide, from Armory Drive and Summit Street.	
WATER SUPPLY (For Vessels)	Through hose line from building at rear.		Through one 2-inch line in building.	
ELECTRIC CURRENT (For Vessels)	None.		A.C., 110 volts, single- and 220/240/440 volts, 3-phase.	
FIRE PROTECTION (Other Than City)	Hydrants, hose, and hand extinguishers.		Fire pump, hand extinguishers, hose, and 24-hour security patrol.	
REMARKS	Naval armory located along rear of lower side. Bay View Park Yacht Basin at inner end of lower side includes recreational craft moorings of Toledo Yacht Club and Bay View Yacht Club.		Wharf is equipped with a 4-inch sewage line and a 1 1/2-inch fueling pipeline from one 1,000-gallon diesel fuel storage tank. Toledo Projects Office of the District Engineer, Buffalo District, Corps of Engineers, is located in building on opposite side of Coast Guard Drive. U.S. Coast Guard Reserve, City of Toledo Police Department, and U.S. Army Corps of Engineers moor at 3 parallel 60- by 4-foot timber pile, timber- decked piers in yacht basin adjacent to inner end of wharf.	

OIL HANDLING AND BUNKERING

Five of the waterfront facilities described in this report are equipped to receive and/or ship petroleum products, or provide bunkering service; four are along the right bank and one is on the left bank of the Maumee River. Vessels at berth are regularly supplied with bunker fuel by tank trucks.

The tabulation below gives information on the facilities equipped to handle petroleum products; details are given in the table of Piers, Wharves, and Docks, beginning on page 13, under the reference numbers indicated. Tank storage at recreational craft service stations is not included.

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET-LWD)	STORAGE TANKS	
				NO.	CAPACITY (BARRELS)
9	Great American Lakes Petroleum Products Co.	300	18	15	350,000
32	Petroleum Fuel and Terminal Co.	557	18	8	216,000
18	Seneca Petroleum Co., Inc.	200	10	1	47,600 (A)
10	The Standard Oil Co. of Ohio	300	21	21	1,021,000
17	Sun Refining and Marketing Co.	918	27	28	2,300,000
TOTALS				73	3,934,600

(A) Asphalt.

DRY BULK HANDLING

Twelve facilities at the port handle dry bulk commodities of one type or another. The Lakefront Pellet Terminal (P.W.D. Ref. No. 2) operated by The Toledo Ore Railroad Co. and three facilities operated by CSX Transportation - Toledo Docks, serve rail traffic bound mainly for inland steel mills.

Toledo World Terminal, Inc. operates two terminals for handling a large variety of bulk commodities (P.W.D. Nos. 8 and 29), and maintains heavy lift cranes at the Toledo-Lucas County Port Authority Wharf (P.W.D. Ref. No. 8).

Kuhlman Corp. operates three bulk handling terminals (P.W.D. Ref. Nos. 23, 24, and 27) served mainly by self-unloading vessels. Each of the facilities maintains substantial

open storage area. The remaining facilities handle materials mostly in connection with their own internal operations.

A summary of the dry bulk handling is given on page 29; further details are given in the table of Piers, Wharves, and Docks beginning on page 13 under the reference numbers indicated.

LIQUID BULK HANDLING

Three terminals at Toledo handle liquid bulk commodities other than petroleum. The handling capabilities of these terminals are tabulated below:

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	COMMODITIES	STORAGE TANKS NO.	STORAGE TANKS CAPACITY (GALLONS)
25	The Andersons	1,100	Fertilizer.	2	5,480,000
8	Industrial Molasses Div. of Westway Trading Corp.	4,196	Molasses. Fertilizer.	14 2	4,600,000 4,250,000
17	Sun Refining and Marketing Co.	557	Benzene.	1-5	Varies.

GRAIN ELEVATORS

Eight grain elevators with a total capacity of 57,000,000 bushels are located in the Toledo area; four of these are located along the waterfront, three of which have facilities for the shipment of grain by water.

One of the waterfront elevators is owned and privately operated by Nabisco, Inc., and is located on the right bank of the Maumee River, below Interstate Highway 280 Bridge. This 6,000,000-bushel capacity elevator receives grain and ships milled flour by rail and truck. At time of this survey, their wharf (P.W.D. Ref. No. 15) was not used for handling cargo.

Cargill, Inc., owns and operates a 5,800,000-bushel elevator on the left bank of the Maumee River below the Interstate Highway 75 Bridge (P.W.D. Ref. No. 22). The elevator receives grain by rail and truck, and ships by vessel. Additional storage for 6,200,000 bushels of grain is available at the company's Maumee elevator, located about 8 miles distant.

Mid-States Terminals, Inc., subsidiary of Countrymark, Inc. (P.W.D. Ref. No. 21) operates a 9,000,000-bushel capacity elevator on the right bank of the Maumee River

above the Consolidated Rail Corp. bridge. This elevator is equipped to receive grain by rail and truck and to ship by vessel.

The Andersons River Terminal Elevator and Wharf (P.W.D. Ref. No. 27) are on the left bank of the Maumee River, above the Consolidated Rail Corp. Bridge. Bulk grain is received at the 7,000,000-bushel-capacity elevator by rail hopper cars and truck. Additional storage for 17,000,000 bushels of grain is available at the company's Maumee, Ohio, elevator located about 8 miles distant.

The following tabulation lists the grain storage facilities in the Toledo area. Details of the four waterside grain elevators are given in the table beginning on page 30.

LIST OF GRAIN STORAGE FACILITIES

NAME OF OPERATOR	LOCATION	STORAGE CAPACITY (BUSHELS)
*The Andersons	Toledo, OH	7,000,000
The Andersons	Maumee, OH	17,000,000
*Cargill, Inc	Toledo, OH	5,800,000
Cargill, Inc	Maumee, OH	6,200,000
Michigan Elevator Exchange	Ottawa Lake, MI	4,000,000
*Mid-States Terminals	Toledo, OH	9,000,000
Nabisco, Inc	Toledo, OH	6,000,000
The Pillsbury Co	Toledo, OH	2,000,000
	TOTAL	57,000,000

*Elevators located along Maumee River equipped with waterfront facilities for shipment of grain by water.

WAREHOUSES

Within the Toledo metropolitan area, 9 companies operate a total of 5,587,600 square feet of dry storage space and 2,025,000 cubic feet of cooler and freezer space; all but one of the warehouses have rail connections, and all are easily accessible to arterial highways. Diversified handling equipment is maintained by the operators, and special services are provided, including packing and crating, forwarding, pool car distribution, carloading, weighing, stamping, and marking. The summary on the following page lists the operators and gives the storage capacities of the dry and cold storage facilities, which are more fully described under individual reference numbers in the table of Storage Warehouses beginning on page 32. The reference numbers identify warehouse locations on the accompanying

Port Facilities Map. The operators listed represent largely the respondents to a mailed questionnaire as time restrictions precluded complete field gathering of information.

In addition to the warehouses listed in the summary, 122,500 square feet of dry storage space are available to the public at the two transit sheds (Sheds A and B) located on the Toledo-Lucas County Port Authority's general cargo Facility No. 1 Wharf (P.W.D. Ref.No. 8); and 25,000 square feet of dry storage space are available in the transit shed located on the Toledo Harbor Warehousing Corp. Wharf (P.W.D. Ref. No. 28).

DRY AND COLD STORAGE WAREHOUSES

S.W. REF. NO.	OPERATOR	STORAGE AREA	
		DRY (SQ.FT.)	COLD (CU.FT.)
12	Ampoint Distribution Services, Inc.....	2,000,000	-
3	Glass City Distribution and Storage.....	60,000	-
7	Great Lakes Cold Storage, Inc.....	124,000	140,000 (C) 1,685,000 (F) 200,000 (X)
1	International Warehouse Services.....	130,000 110,000 (Z)	-
4	King Warehouses.....	175,000	-
6	Product Forwarding Corp.....	250,000	-
2	Toledo Harbor Warehousing Corp.....	75,600	-
5	Willis Day Storage Co.....	90,000	-
8	Willis Day Storage Co.....	133,000	-
9	Willis Day Storage Co.....	20,000	-
11	Willis Day Storage Co.....	2,000,000	-
10	South Byrne Industrial Park Corp.....	420,000	-
	TOTAL.....	5,587,600	2,025,000

(C) Cooler. (X) Convertible.
(F) Freezer. (Z) Foreign Trade Zone.

OPEN STORAGE

In addition to the long- and short-term, covered facilities for waterborne cargo, the Toledo-Lucas County Port Authority has open storage areas available to the public for storing commodities not requiring protection from the weather. These areas, totaling approximately 85 acres, are on and at rear of the Port Authority's general cargo Facility No. 1 Wharf (P.W.D. Ref. No. 8). In addition, South Byrne Industrial Park Corp. has 5 acres of open storage area located adjacent to their storage warehouses (S.W. Ref. No. 15) at South Avenue and South Byrne Road. Other operators with waterfront facilities at the Port of Toledo have open storage areas to meet their own operational requirements; these areas usually are not available for public use.

STORAGE WAREHOUSES

WAREHOUSE REF. NO. ON MAP NO. 1	11	12
OPERATOR AND ADDRESS	Willis Day Storage Co. 845 Second Street/P.O. Box 676 Perrysburg/Toledo, OH 43694	Ampoint Distribution Services, Inc. 851 Third Street/P.O. Box 911 Perrysburg/Toledo, OH 43692
BUILDING DESIGNATION/S	Merchandise Division Warehouse.	Ampoint Warehouse.
LOCATION	845 Second Street, Perrysburg, OH	Same as above.
KIND OF STORAGE	Dry.	Dry.
COMMODITIES USUALLY STORED	General merchandise.	General merchandise.
DESCRIPTION Type of Construction	Concrete frame, concrete walls; concrete floors.	Concrete block walls; concrete floor.
Number of Floors	1	1
Clear Height for Storage (Feet): First Floor..... Other Floors.....	 27 -	 27
Load Capacity (Lbs/Sq.Ft.): First Floor..... Other Floors.....	 Unlimited. -	 Unlimited.
AREAS FOR PUBLIC STORAGE: General Storage.....(Sq.Ft.) U.S. Customs Bonded...(Sq.Ft.) Cooler Space.....(Cu.Ft.) Freezer Space.....(Cu.Ft.) Convertible Space.....(Cu.Ft.)	 2,000,000 - - - -	 2,000,000 - - - -
RAILWAY CONNECTIONS	Platform-level tracks, with total of 20 loading stations, connect with Baltimore and Ohio Railroad.	Platform-level tracks, with total of 25 loading stations, connect with Baltimore and Ohio Railroad.
TRUCKLOADING STATIONS	40	35
HANDLING EQUIPMENT	Forklift trucks.	20 forklift trucks.
FIRE PROTECTION	Automatic detection and sprinkler system.	Automatic detection and sprinkler system.
REMARKS	-	-

HOISTING EQUIPMENT - ASHORE AND AFLOAT

General cargo at the port is usually handled to and from vessels by ships' tackle. However, shore-based, hoisting equipment with lifting capacities ranging up to 110 tons are available to the public at the Toledo-Lucas County Port Authority Facility No. 1 Wharf (P.W.D. Ref. No. 8).

Cranes, derricks, and special-handling equipment at other waterfront facilities within the port area are for the sole use of the operating companies and are described under "Mechanical Handling Facilities" in the preceding table of Piers, Wharves, and Docks. No floating cranes or derricks for making heavy lifts at shipside are based at the port.

The tabulation below gives details of the hoisting equipment ashore available for hire at the Port Authority's Facility No. 1 Wharf:

Toledo-Lucas County Port Authority

One electric, traveling, revolving, full-portal, gantry crane with 110-foot boom; lift capacity 110 tons at 35-foot radius and 50 tons at 85-foot radius--"Big Lucas."

One diesel-electric, traveling, revolving, full-portal, gantry crane with 110-foot boom; lift capacity 72 1/2 tons at 35-foot radius and 36 tons at 85-foot radius--"Little Lucas."

Toledo World Terminals, Inc.

Two diesel-electric, traveling, revolving, full-portal, gantry cranes; each with lift capacity of 32 tons at 30-foot radius and 25 tons at 45-foot radius.

Two diesel-electric, traveling, revolving, full-portal, gantry cranes; each with lift capacity of 25 tons at 35-foot radius and 20 tons at 45-foot radius.

Two 35-ton, diesel, crawler cranes, each with 100-foot boom.

Cranes are equipped with one 15-, one 12-, one 11-, and two 8-cubic yard buckets; and two 83- and two 72-inch electric magnets.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

The Port of Toledo has two waterfront marine repair plants engaged in making repairs to vessels of all sizes. During the closed navigation season, many lake vessels "layup" at the port for major repairs to or replacements or conversions of propulsion machinery and equipment; alterations to hulls, hatches, cargo-handling gear, or deck houses; and general maintenance work. Since most of the work is done above the waterline and aboard vessels at various locations in the harbor, emphasis is placed upon the use of portable equipment.

The repair plant operated by Merce Industries, Inc. (P.W.D. Ref. Nos. 12 and 14) is located on the right bank of the Maumee River below Interstate Highway 280 Bridge. The plant has two graving docks, the largest one handling vessels up to 680 feet in length and 78 feet in width.

A vertical boat lift is owned and operated by H. Hansen Industries and is located at their plant on the left bank of the Maumee River, approximately 500 feet above the Norfolk and Western Railway bridge. It is electrically operated, has a lift capacity of 50 tons, and can handle small vessels up to 75 feet in length and 24 feet in breadth.

Detailed descriptions of the repair plants and graving docks are given in the tables on pages 40 and 41.

FLOATING EQUIPMENT

The Gaelic Tugboat Co. and the Great Lakes Towing Co. each maintain three tugs for towing, docking, and shifting vessels at the port and for towing services at numerous other ports on the Great Lakes. The table below describes in detail the commercial tugs serving the Port of Toledo.

OPERATOR ADDRESS AND LOCAL BASE	NAME	DIMENSIONS OVERALL		DRAFT UNDER LOAD (FEET)	HORSE-POWER
		LENGTH (FEET)	WIDTH (FEET)		
Gaelic Tugboat Co., Inc. Box 114 Grosse Ile, MI 48138 P.W.D. Ref. No. 31	Galway Bay Patricia Hoey Newcastle	85.0 85.0 82.0	25.0 25.0 25.0	11.0 11.0 10.7	1,750 1,750 1,250
Great Lakes Towing Co. 1800 Terminal Tower Cleveland, OH 44113 P.W.D. Ref. No. 5	California Montana Utah	81.0 84.3 81.0	21.3 21.3 21.3	12.5 12.5 12.5	1,200 1,400 1,250

Additional information on floating equipment can be obtained from "Waterborne Transportation Lines of the United States" published by the United States Army Corps of Engineers. This report describes the American flag vessels engaged in the carriage of freight and passengers, listing the net registered tonnage, length, width, draft, horsepower, carrying capacity, and other details of construction. It also describes the operations of each vessel operator, commodities carried, waterways used, and the localities served. Copies of this publication are for sale by the District Engineer, U.S. Army Engineer District, New Orleans, ATTN: CELMN-ED-S, P. O. Box 60267, New Orleans, LA 70160. Mail orders should include check or money order for $7.00 made payable to Finance and Accounting Office, USAED, New Orleans.

MARINE REPAIR PLANTS

REF. NO. OF NEAREST PIER	12 and 14	31
OPERATOR AND ADDRESS	Merce Industries, Inc. 2245 Front Street Toledo, Ohio 43605	H. Hansen Industries 2824 Summit Street Toledo, Ohio 43611
LOCATION OF PLANT	Right bank of Maumee River, approximately 0.9 mile below Interstate Highway 280 (Craig Memorial) Bridge.	Left bank of Maumee River, approximately 500 feet above Norfolk and Western Railway bridge.
REPAIR SHOPS AND EQUIPMENT	Machine, paint, plate, pipe, sheet metal, electric, fabrication, propeller and boiler shops; mold loft; portable air compressors, welding units, and boring bars; 2 graving docks, cranes with lift capacities up to 100 tons; one workboat with welding units and air compressor; one launch; and one 20-ton, diesel, mobile hoist with 52-foot boom.	Machine, fabrication, and plate shops; portable air compressors, welding, and boring bars; metal-spraying equipment; workboat with air compressors and welding units; one scow equipped with lighting plant; one 50-ton, electric, vertical boat hoist, one 25-ton, gasoline, mobile crane with 70-foot boom, and one 25-ton, diesel mobile hoist with 73-foot boom.
NATURE OF WORK UNDERTAKEN	Construction, conversion, and repairs of any nature to wooden and steel vessels; drydocking vessels up to 666 feet in length; repairing propellers up to 22 feet in diameter.	Above-waterline repairs of any nature including hulls, boilers, deck engines, and machinery; cylinder relining done aboard vessel; and construction of various types of small vessels.
LARGEST SHAFTS PRODUCED	Lathe: 48-inch swing by 60-foot bed.	Lathe: 48-inch swing by 30-foot bed.
LARGEST CASTINGS PRODUCED	By subcontract.	None.
VESSEL CAPACITY AT PLANT	Four to six depending on size.	Two or three depending on size.
REMARKS	Repair work performed at plant, on board vessels at any location in harbor, and occasionally throughout the Great Lakes.	Repair work performed at plant and on board vessels at any location in harbor.

GRAVING DOCKS

REF. NO. OF NEAREST PIERS	12 and 14	
OWNED AND OPERATED BY	Merce Industries, Inc.	
ADDRESS	2245 Front Street Toledo, Ohio 43605	
LOCATION ON WATERFRONT	Right bank of Maumee River, approximately 0.9 mile below Interstate Highway 280 (Craig Memorial) Bridge.	
TYPE OF CONSTRUCTION	Each graving dock: sloping concrete sides, timber floor, and concrete entrance with floating steel caisson gate.	
DIMENSIONS (FEET):	No. 1	No. 2
Length on bottom over keel blocks.....	505	601
Clear length inside at top.	545	650
Width on sill at entrance..	72	84
Width at top of keel blocks.....	80	83
Clear width inside at top..	102	100
Depth over sill at LWD.....	12	14
Depth over keel blocks at LWD.....	12.5	14.5
LARGEST VESSEL HANDLED (FEET)	540 by 58	680 by 78
CRANE SERVICE	One 20-ton diesel, mobile hoist with 52-foot telescopic boom.	Two electric, traveling, full-portal, gantry cranes, each with 100-foot boom and capacity of 50 tons at 50-foot radius; and use of mobile hoist described under Graving Dock No. 1.
UTILITIES AVAILABLE	Each graving dock is equipped with lines for supplying compressed air, oxygen, and acetylene gas, and A.C., 110/220/440 and D.C., 110/220 volts.	

RAIL LINES

The port area of Toledo is served by the following railroads:

Ann Arbor Railroad (Michigan Interstate Railway Co. - operator)
CSX Rail Transport
Consolidated Rail Corp.
Grand Trunk Western Railroad Co.
Norfolk and Western Railway (Norfolk Southern Corp.)
Toledo Terminal Railroad

Trackage among these railroads enable each to interchange cars with the others, either directly or through connecting roads.

The Toledo Terminal Railroad is a switching line that performs extensive service for industries in the north, east, and central parts of the city as well as switching for most of the rail lines serving Toledo.

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LEGEND

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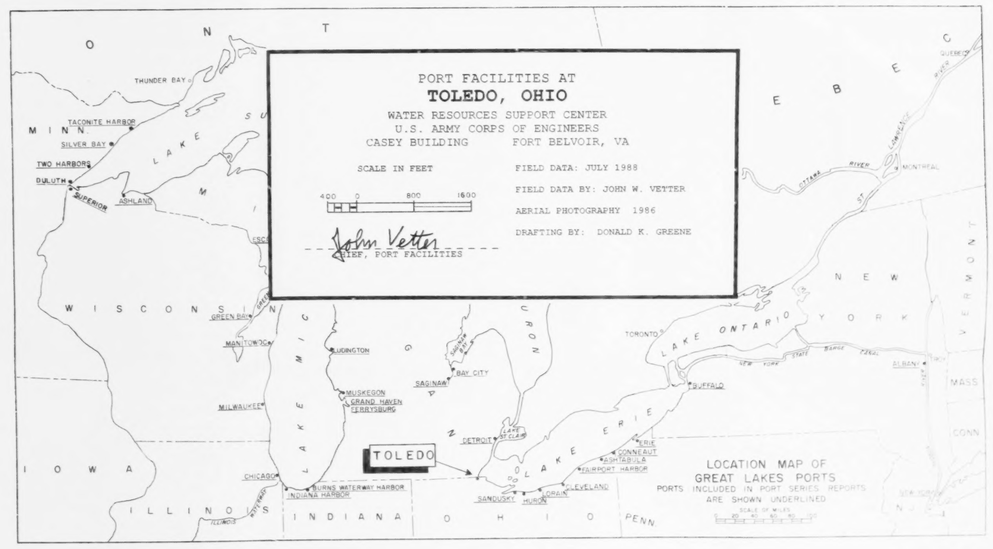
- HEAVY LIFT ITEMS
- SAND, GRAVEL, STONE, CEMENT, SHELL, GYPSUM
- COAL, COKE
- PETROLEUM PRODUCTS
- GRAIN
- BENZENE
- FERTILIZER – DRY AND LIQUID
- GENERAL CARGO
- BULK – DRY AND LIQUID
- STEEL, STEEL PRODUCTS, SCRAP METAL
- PAPER PRODUCTS, NEWSPRINT
- GRAIN ELEVATOR
- ORE, PIG IRON
- DRYDOCKING
- DRY STORAGE WAREHOUSES
- COLD STORAGE WAREHOUSES
- SALT
- COAL BUNKERING



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